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VOLUME 48



# *SPECIES INTELLIGIBILIS* FROM PERCEPTION TO KNOWLEDGE

VOLUME ONE

*Classical Roots and Medieval Discussions*

BY

LEEN SPRUIT



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**To Lavinia**



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## INTRODUCTION

This study examines the history of a fundamental problem in Peripatetic cognitive psychology, namely the nature and function of the mechanisms that provide the human mind with data concerning physical reality. Aristotle regarded the mind as capable of grasping forms detached from matter. However, most of his medieval and Renaissance followers interpreted this conception—for reasons I hope to make clear—along the lines of a theory of abstraction, grounded in the mediating role of representational forms called “intelligible species”, and since Thomas Aquinas characterized as “quo intelligitur”<sup>1</sup>.

This approach was not universally accepted. In particular, after Thomas Aquinas’ death, a long series of controversies developed about the necessity of intelligible species. The main purpose of this work is to analyze, in their historical development, the philosophical positions concerning this crucial problem for the medieval theory of knowledge—that is, the formal mediation of sensible reality in intellectual knowledge.

The theory of intelligible species addresses the issue of how one attains knowledge of sensible reality; it attempts a non-circular analysis of this process—that is, with the aid of formal principles, such as the intelligible species that are not direct objects of cognition, and of mental capabilities, such as the agent intellect, that are not knowing faculties. At the outset of intellectual cognition, the active feature of mind (agent intellect) produces, on the basis of sensory representational devices (“phantasmata”), a mental representation (intelligible species) enabling the receptive mind (possible intellect) to grasp the cognitive content (“quidditas rei” or essence), contained in the species.

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<sup>1</sup> For more detailed information about terminological aspects, see ch. I, § 4. For the central role of Aquinas in the medieval discussion on mental representation, see ch. II, § 3.

This rough picture is sufficient to suggest some key questions. What is the role of sensory images in this process? What is the status of the mind's 'wired-in' capabilities in the production of knowledge? What is the relationship between perception and knowledge?

In analyzing the status and function of mediating principles in the mental elaboration of sensory experience, I focus on the role of intelligible species in what medieval Peripatetics call "simplex apprehensio", that is, the intellectual grasp of a single material essence<sup>2</sup>. Only marginal attention is devoted to judgment, memory, acquisition of habits and syllogistic reasoning<sup>3</sup>. Simple apprehension, grounded upon the intelligible species by the advocates of this notion, is a mental act operating 'in between' sense perception and concept formation. In this introduction, sense perception and concept formation are discussed only insofar as they help delimiting what the intelligible species is not: it is neither an unconscious concept, nor an immaterial copy of a sensory representation.

The discussions in Peripatetic cognitive psychology<sup>4</sup> examined here span a fairly well-delimited period—that is, from the second half of the 13th century until the end of the 17th century<sup>5</sup>. This first volume deals with medieval discussions<sup>6</sup>. Another volume is planned,

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<sup>2</sup> Only insofar as it applies to more than one individual, this essence may be regarded as universal.

<sup>3</sup> A disclaimer is in order here: this work is not an overall reconstruction of medieval and Renaissance Peripatetic cognitive psychology or epistemology. Moreover, only printed sources are taken into account.

<sup>4</sup> It is well-known that Peripatetic cognitive psychology after Aristotle was subject to many influences. When I speak of Peripatetic cognitive psychology, I mean, in general, post-Aristotle doctrines, often deviating from 'genuine' Aristotelian conceptions.

<sup>5</sup> The discussions of the 18th-century Scholastics are not examined here.

<sup>6</sup> The doctrine of the intelligible species in medieval philosophy has been examined by F. Prezioso, *La "species" medievale e i prodromi del fenomenismo moderno*, Padova 1963 and F. Corvino, "La nozione di specie intelligibile da Duns Scoto ai maestri agostiniani del secolo XIV (Gregorio da Rimini e Ugolino da Orvieto)", in *Rivista di filosofia neoscolastica* 70(1978), 149-178. Z. Kuksewicz, *De Siger de Brabant à Jacques de Plaisance. La théorie de l'intellect chez les Averroïstes latins des XIIIe et XIVe siècles*, Wrocław-Varsovie-Cracovie 1968 and K. Tachau, *Vision and Certitude in the Age of Ockham. Optics, Epistemology and the Foundations of Semantics 1250-1345*, Leiden 1988, pay attention to the problem of formal mediation in intellectual cognition. Also M.M. Tweedale, "Mental representations in later medieval Scholasticism", in *Historical Foundations of Cognitive Science*, ed. J.-C. Smith, Dordrecht 1990, 35-51, should be mentioned. The issue of intelligible species is also discussed in many comprehensive historical studies, as well as in articles and mono-

which is devoted to Renaissance controversies, developments of late Scholasticism, and the elimination of the intelligible species in modern non-Aristotelian philosophy.

It is pertinent to recall at this point that the problem of how the human mind processes incoming sensory information, and the status of mental representations are still baffling issues for contemporary philosophy. Present discussions in the philosophy of mind and cognitive science may offer useful perspectives on psychological theories of the past—precisely because there is so little consensus about the nature of mental representations and the way they relate to represented objects. This suggestion, however, is not meant to justify ‘external criticism’ which is, in my opinion, inappropriate in historical studies; internal criticism, by contrast, is fully justifiable and even necessary. In pointing out what appear to be inconsistencies or unacceptable consequences, I will be providing evidence for my interpretations, in addition to informing the reader about the views under examination<sup>7</sup>.

I hinted at the significance of contemporary philosophy of mind for historical studies. I believe that the converse must also be emphasized: the controversies analyzed in this book may offer philosophers of mind ample opportunity for meditation. However, the enigmatic character of Peripatetic conceptual tools for philosophical psychology may prevent most philosophers from studying medieval and Renaissance authors. In consideration of this obstacle, I have decided to present, in the first section of this introduction, a systematic overview of the conceptual problems involved, avoiding technical terminology as far as possible. My aim is to provide an accessible picture of an important background element of contemporary discussions on mental representations.

The second section of the introduction examines the following broad systematic issues: (1) knowledge and the grasp of individual

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graphs on individual authors. This is, however, the first comprehensive monograph exclusively devoted to this problem. Indeed, Prezioso treats only a restricted number of authors, and from a somewhat biased perspective. Tachau concentrates on the English epistemological debate in a restricted period, and touches upon many other subjects. Kuksewicz's monograph examines medieval Averroism only.

<sup>7</sup> A similar methodological approach is developed by A. Poppi, in “La discussione sulla «species intelligibilis» nella scuola padovana del Cinquecento”, in idem, *Saggi sul pensiero inedito di Pietro Pomponazzi*, Padova 1970.

objects; (2) causal theories of perception and cognition; (3) preliminary conditions for (and functional role of) unconscious principles and mechanisms in the acquisition of intellectual knowledge; (4) nature and limits of naturalistic approaches to cognitive psychology.

The third and fourth sections are devoted to more narrowly characterized historical issues. They provide a systematic justification for concentrating on intelligible species—without considering sensible ones—and a global summary of medieval discussions.

### § 1. THE DOCTRINE OF INTELLIGIBLE SPECIES IN OUTLINE

The need for a cognitive principle that is unknown prior to reflection, and that makes knowledge possible, is envisaged in medieval philosophical discussions on the problem of how an immaterial mind may grasp material reality in its intelligible kernel. Although direct evidence for this principle is not available, one may still introduce it as a theoretical postulate, needed for its extensive explanatory power. Abstracted by the mind and with a content grounded in sensory information, the intelligible species seems apt to bridge the gap between mind and sensible reality, and thus to account for the objectivity of mental contents.

As an entry point to an examination of these issues, let me briefly summarize what may be called the positive theory of intelligible species<sup>8</sup>. According to medieval schoolmen, intellectual cognition is produced by an immaterial mind. And yet, it is based upon sense perception: mind being conceived as form of the body, the natural object of human knowledge is the essence or “quidditas” of sensible things<sup>9</sup>.

Sense perception occurs when sense organs are affected by external stimuli; it consists essentially in the production of sensory representations called “phantasmata”. The latter are not identifiable

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<sup>8</sup> The species doctrine presented in this section is mainly inspired to the view of Thomas Aquinas, who introduced the notion of the intelligible species as formal principle of intellectual cognition. For a historical analysis of his doctrine, see ch. II, § 3.

<sup>9</sup> The kind of dualism presupposed by the doctrine of species is hard to characterize. The immateriality of mind is not only used as argument against, but also as reason for the necessity of mental representations, somehow originating in sensory images, and making physical objects accessible to the human mind. See *infra*.

with iconic (or pictorial) images, because they comprise elements of all five senses<sup>10</sup>. Each sensory 'module'—vision, hearing, smell, taste and touch—can be involved in generating perception.

Phantasms, as sensory representations, are the product of a dynamic complex of inner forces (the so-called inner senses: common sense, imagination or phantasy, "aestimativa" and/or "cogitativa"<sup>11</sup>), capable of organizing and transforming the information received from sense organs and external senses. Thus, phantasms, *qua* representations occurring in the organic faculties, are certainly selective, generic, and even 'abstract'. In virtue of these properties, they are regarded as an adequate basis for the production of the intelligible species and the starting point of any intellectual activity<sup>12</sup>.

The first operation of intellectual knowledge is the apprehension of an individual essence and may be regarded as an act of discrimination without judgment<sup>13</sup>. In the so-called "simplex apprehensio", the active feature of the human mind (agent intellect) derives, by

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<sup>10</sup> There is an extensive contemporary discussion as to whether mental images are pictorial, descriptive or iconic. See, inter alia, A. Paivio, "Images, propositions, and knowledge", in J.M. Nicholas (ed.), *Images, Perception and Knowledge*, Dordrecht 1977, 47-71; Z.W. Pylyshyn, "What the mind's eye tells the mind's brain: a critique of mental imagery", in *idem*, 1-36; D.C. Dennett, "The nature of images and the introspective trap", in *Readings in Philosophy of Psychology*, ed. N. Block, vol. II, Cambridge-Ma. 1981, 128-134; Z.W. Pylyshyn, "Imagery and artificial intelligence", in *idem*, 170-194; Z.W. Pylyshyn, "Mental pictures and cognitive science", in *Philosophical Review* 92(1983), 499-541; K. Sterelny, "The imagery debate", *Philosophy of Science* 53(1986), 560-583.

<sup>11</sup> See, for a general discussion of the inner senses in medieval philosophy, H.A. Wolfson, "The internal senses in Latin, Arabic, and Hebrew philosophical texts", in *idem*, *Studies in the History of Philosophy and Religion*, vol. I, Cambridge 1973, 250-314.

<sup>12</sup> For a survey of the historical interpretations of Aristotle's account of sense perception, see R. Sorabji, "From Aristotle to Brentano: the development of the concept of intentionality", in *Aristotle and the Later Tradition*, eds. H. Blumenthal and H. Robinson, London 1991, 227-259.

<sup>13</sup> The medieval context of the "simplex apprehensio" is the belief that the human mind cannot know more than one object at a time, because it cannot be simultaneously actualized by more than one intelligible species. The background of this doctrine is the frequently challenged comparison of the possible intellect, as "subiectum", to prime matter or the body, which cannot be informed by more than one form at a time. In this context, I do not discuss the plausibility of this construction of knowing only one object at a time which, incidentally, is also theorized by modern phenomenological philosophy.

abstraction from sensible representations, an intelligible species<sup>14</sup>. The abstracted species is received by the possible intellect, i.e. mind *qua* receptive 'organ'<sup>15</sup>. When the species is received by the mind, the latter is actualized and comes to know, by an individual and simple act, the "quidditas" associated with the intelligible species. The intelligible species is thus the link between a receptive, interpretation-independent activity (sense perception), and the more specifically *cognitive* processes such as judgment, reflection, discursive thinking, and syllogistic reasoning.

A crucial feature of this doctrine is that the intelligible species is viewed as "quo intelligitur" as opposed to "quod intelligitur". This means that the intelligible species cannot be identified with an effectively grasped cognitive content (the invariants of perception or the essences of sensible things); rather, it is 'something' which, unknown prior to reflection, communicates the intelligible kernel of sensible reality to the mind.

Although the intelligible species is mostly viewed as "similitude", no (pictorial) 'correspondence' is postulated between mental acts and the objects they relate to. The intelligible species issues from the processing of sensory information by the agent intellect, while the relationship between sensible objects, species, and mental acts is essentially structural. The intelligible species may be regarded as a mental representation whose *raison d'être* is chiefly *functional*: it provides the immaterial mind with an integrated and accessible representation of sensory information.

The ontology of the intelligible species, and its consistency with other endorsed views were hardly ever addressed issues. The intelligible species does not seem to fit any of Aristotle's categories<sup>16</sup>. They are generally viewed as produced on the basis of phantasms. However, the species cannot be extracted "simpliciter" from sensory images, because sensory representations contain them only

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<sup>14</sup> Sometimes authors are treated who are exclusively concerned with this issue, that is, who do not examine explicitly the intelligible species. Their position is discussed either for intrinsic interest or because their work introduces significant novelties for the species debate.

<sup>15</sup> Notice that the receptive mind is not (and uses no) physiological organ.

<sup>16</sup> The qualification of the intelligible species as accident was favored by those who conceive the intellect as "subiectum" of the species. However, the soul-subject thesis was not generally accepted.

potentially. The basic tension underlying these observations is hard to solve: intelligible species are produced on the basis of physically grounded sensory representations; and yet, they are received by an immaterial mind. A (head-in-the-sand) way out frequently adopted in medieval discussions is to consider only the functional role of species, without investigating their ontological status or origin.

In addition to being produced from sensory images, the intelligible species is also generally viewed as generating 'from' the possible intellect's potentiality. This view suggests the possibility of circumventing some mind-body puzzles. Firstly, one can consistently uphold the Aristotelian doctrine on the presence of cognitive objects in the mind itself (see *De anima*, III.4 and 8), because, according to the species doctrine, the mind is capable of representing them 'internally'. Secondly, the thorny issue of the ontological status of the species can be avoided: although the production of the species from the mind's potentiality does not exclude that mental content is determined by sensory images, it does not entail the undesirable consequence that the species must arise from the latter. This consequence would contradict Aristotelian physics, which rules out a transfer of accidents from one subject to another.

Characterized by a fundamental ambiguity on the ontological issue, the discussion on the species focuses mainly on its function in psychological processes of knowledge acquisition, and hinges on an interesting interpretation of the receptive and productive aspects of knowledge acquisition. According to Peripatetic philosophy, whatever is received is affected by the nature of the recipient: "Omne quod recipitur, recipitur modo recipientis"<sup>17</sup>. Both sense perception and intellectual cognition are viewed as *receiving* their contents. In sense perception, the information flowing from sense organs is transformed in the very act of reception. No particular inner active force or "sensus agens" is presupposed<sup>18</sup>. In intellectual cognition,

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<sup>17</sup> The notion of a 'reception of forms or species' in Aristotelian cognitive psychology has engendered many misunderstandings. Aristotle simply means that senses and mind become like the external object in *form*; he does not suggest that forms flit from objects to sense organs, eventually penetrating our soul.

<sup>18</sup> There are some exceptions; e.g., the case of Jandun and some of his followers. For discussion of this issue in the Middle Ages, see A. Pattin, "Pour l'histoire du sens agent au Moyen Age", in *Bulletin de philosophie médiévale* 16-17(1974-75), 100-113,



by contrast, pure reception is not sufficient to trigger actual cognition. The reason is that the senses have access to an actual object, while the intellect does not: sensory images are only intelligible potentially. Therefore, the mediation of the agent intellect is necessary for representing cognitive objects in a form accessible to the intellect, that is, through an intelligible species: in generating the species, perceptual capabilities and mental activity meet.

Let me try to summarize the main points of this problematic, reducing the classical technical vocabulary to a minimum. Peripatetics consider sense perception as a process delivering information to be selectively used by the mind. Before making effective use of this information, the mind has to transform it: in the abstraction of an intelligible species the active feature of mind (“intellectus agens”) provides the knowing mind, which is also a mental record (“intellectus possibilis”), with a cognitive content transcending the content represented by sensory images.

Only after the reception of the intelligible species, concept formation and discursive reasoning are possible. The acquisition of concepts is thus a process presupposing the mental capacity for extracting coded information (intelligible species) from sensory repertoires. This coded information, primarily inaccessible to introspection, is a crucial basis for knowledge: it makes available to the mind the essence of material things—that is, the first and natural objects of cognition.

According to Peripatetics, the effective causes of sense perception and intellectual cognition—the effects of sensible forms impinging upon sense organs and, respectively, the intelligible species which triggers the mental act—are strictly *instrumental*. This means that the mind grasps what is transmitted through relevant intermediate ‘events’, rather than these intermediate events themselves; it grasps the sensible essences progressively detached from matter and individuating conditions.

As regards the senses, Peripatetics presuppose as self-evident that the organism’s way of coding sensory information places the

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and idem, *Pour l'histoire du sens agent. La controverse entre Barthélemy de Bruges et Jean de Jandun, ses antécédents et son évolution*, Louvain 1988.

sensible object outside the percipient: for instance, we see physical objects rather than their effects on the eye. Indeed, when Aristotle observes that in perception our soul grasps the *ratio* of the sensible object, he probably means that our perceptual system is sensitive to 'higher order' objects, that is to say, invariants in the stimulus array. A similar scheme applies to intellectual cognition: the intelligible species is explicitly defined as "quo", and is accessible only by reflection<sup>19</sup>.

## § 2. CRITICAL EVALUATION

### 2.1. *Mind and the essence of individual objects*

It is a generally accepted view in contemporary cognitive psychology that perception and intellectual cognition primarily regard states of affairs or conceptual clusters, rather than individual objects or concepts<sup>20</sup>. The species doctrine, by contrast, centers on the grasp of the essence of individual material objects. And more generally, the commitment to mental acts aimed at the essence of a single object is perhaps one of the most peculiar features of Peripatetic psychology. This apprehension is a form of discrimination not involving judgment, and it is logically prior to any propositional attitude<sup>21</sup>. Simple apprehension marks the transition from representations, organized into physiological structures, to coded mental forms providing data for mental discursive activity. One is thus led to regard Peripatetic cognitive psychology as positing a fundamentally non-discursive, cognitive stage<sup>22</sup>.

Logically prior to judgment, simple apprehension is beyond truth and falsehood: it either hits the object or simply fails to do so<sup>23</sup>. The

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<sup>19</sup> The fact that the intelligible species cannot be a direct object of knowledge holds for primary knowledge only. The intellect, however, can reflect upon its own operations.

<sup>20</sup> Phenomenology is a significant exception.

<sup>21</sup> For the controversy between Sorabji, Lloyd and others about non-propositional thought in Aristotle, inspired by *De anima*, 426b8-427a16, I refer to ch. I, § 1.3.

<sup>22</sup> There are few exceptions to this rule among the authors examined here. These theorize the first operation of the intellect as judgment; cf. Bonaventure (ch. II, § 1.7), Zabarella (ch. IX, § 1.1), Piccolomini (ch. IX, § 1.3).

<sup>23</sup> This does not imply that it should be identified with some sort of intuition; see ch. I, § 1.3.

distinction between simple apprehension and judgment, however, raises serious epistemological problems.

Firstly, how can the allegedly “simple” apprehensions be independent of all linguistic or propositional context? In other words, is it possible to have a cognitive grasp of essences through distinct, non-linguistic representations? Secondly, is the species a kind of proto-concept? And if this is so, are we then *ipso facto* committed to some version of the (traditionally problematic) abstraction theory of concept formation?

Symbolic but pre-linguistic awareness or apprehension is a meaningful notion in Peripatetic psychology since ‘symbols’, such as species, are supposed to carry information even though they do not belong to language proper. This view provides a basis for addressing the second question. In Peripatetic psychology, perceptual processes are input driven and organized around “bottom-up” constructive processes. Perception is encapsulated, that is, it is largely independent of the organism’s beliefs and goals<sup>24</sup>. Perception provides the data for inferences leading to theories of the world. Concepts are produced by the mind; they are not abstracted, and depend only—as far as their content is concerned—upon the intelligible species. The latter are not proto-concepts, but should rather be seen as information-bearing representations.

## 2.2. *The species and causal theories of perception and cognition*

The species doctrine offers a sophisticated account of the mechanisms involved in the apprehension of sensible reality, by postulating the existence of mediating representational ‘devices’ both on the sensory and intellectual levels. Is it possible, just in virtue of this postulate, to regard the species doctrine as a representational theory of mind? Surely, the latter shares with the species doctrine a thesis conflicting with naive realism, namely, the negation of a direct grasp of physical reality. However, we should recall here that the species cannot be identified with any intermediate object: it is neither the direct object of perception nor the immediate (mental) object of cognition. In this sense, then, the species doctrine differs

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<sup>24</sup> Exceptions to this basic conviction are rare; only Alhazen, strongly influenced by Stoic epistemology, maintains that perception is cognitively penetrable; cf. ch. I, § 3.1.

from the most significant varieties of the representational theory of mind, including some 17th-century theories of ideas<sup>25</sup> and early 20th-century sense data philosophy.

It is rather surprising that this distinctive feature of the species doctrine has been often neglected: in many philosophical disputes, the species doctrine was allegedly refuted with arguments (implicitly) assuming that the species is an intermediate object *limiting* cognitive acts—that is, blocking or hindering knowledge of the essences which the species is supposed to represent<sup>26</sup>. In view of this historically recurrent misunderstanding, it seems appropriate to provide a more precise account of the nature and function of the intelligible species, by a comparison (and contrast) with arguments concerning the representational theory of mind.

Roughly speaking, the representational theory of mind is concerned with explaining two phenomena: perception and mental representation. The latter, though not universally accepted as an indispensable notion for a theory of mind, plays a central explanatory role in many contemporary approaches to cognition<sup>27</sup>. Moreover, while the function of mental representations is extensively studied and discussed, their nature and origin are only seldom investigated. These features, I argue below, make possible a substantive comparison with the intelligible species.

In considering the relationship between species and mental representations I proceed as follows. In subsection 3, I first examine some arguments for a representational model of perception and the relevant points of contact with the doctrine of intelligible species. I then present a brief survey of some significant objections against representational theories of perception. Finally, I argue that the species doctrine circumvents some of the major problems for (some versions of) the representational theory of mind. Subsection 4 isolates significant points of contact between the notions of intelligible

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<sup>25</sup> For discussion, see Part III, in vol. II (forthcoming).

<sup>26</sup> See chapters III and IV for Henry of Ghent, Ockham and other authors advancing this type of objection.

<sup>27</sup> For an illustrative example, see the controversy between J.J. Gibson and J. Fodor. The former is a critic of mental representations. See especially his *The Ecological Approach to Visual Perception*, Boston 1979. For a reaction to this volume, see J. Fodor & Z. Pylyshyn, "How direct is visual perception? Some reflections on Gibson's 'Ecological Approach'", in *Cognition* 9(1981), 139-196.

species and mental representation, as conceived in modern cognitive psychology.

### 2.3. *Representational models of perception and the intelligible species*

An evident connection between the species doctrine and representational theories of perception is their confluence on a causal theory of perception<sup>28</sup>. A schematic argument for the causal theory runs as follows. (i) To perceive a material object is to be in a certain kind of perceptual state as a causal result of the action of that object; (ii) physical objects cannot cause direct perceptual experience; (iii) therefore, a distinction between phenomenal object and physical object is called for.

A historically prominent version of the causal theory of perception is representative realism, which claims that, in perception, sensations somehow represent their causes, i.e., physical objects. Most representative realists were also sense data theorists. The latter, in order to account for the chain of events leading to the perception of an object, have to presuppose some form of representational mediation, grounded upon sense data, *sensa* or mental objects<sup>29</sup>.

Now, in the afore-mentioned schematic argument, substitute cognition for perception. Then, with some *caveats*, we may say that the advocates of intelligible species endorse the premises of the modified argument, though with different terms and with different justifications (such as the material character of phantasms and the

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<sup>28</sup> For the contemporary standard version, cf. H.P. Grice, "The causal theory of perception", in *Proceedings of the Aristotelian Society*, suppl. vol. 35, 1961, 121-152. I do not refer to the classical arguments for the sense data theory, such as (scientific) relativity of perception and illusion, because no significant comparison with the arguments for intelligible species is possible without committing the fallacy of anachronistic reasoning. These arguments could be of interest for the discussion on sensible species; in particular, from Peter Aureol onward. For discussion, see C.D. Broad, "Some elementary reflections on sense perception", in *Perceiving, Sensing, and Knowing*, ed. R.J. Schwartz, Berkeley 1965, 29-48; R. Firth, "Sense-data and the percept theory", in *idem*, 204-70; M. Mandelbaum, "Towards a critical realism", in *Philosophy, Science and Sense Perception*, Baltimore 1966<sup>2</sup>.

<sup>29</sup> The radical consequence, as exemplified by Berkeley and John Stuart Mill, is phenomenalism: material objects become bundles of actual and potential sense impressions. R.A. Fumerton, *Metaphysical and Epistemological Problems of Perception*, Lincoln-London 1985, ch. IV, shows that the causal theory of perception and phenomenalism are vulnerable to many objections of the same kind.

immateriality of mind). The conclusion, however, would remain unacceptable for many authors considered here, because Peripatetic epistemology regards the "quidditas" of material things as the mind's natural and direct object. The intelligible species, in fact, is an instrument no implicit awareness of which is presupposed.

In view of these similarities, it is not surprising that the arguments against intelligible species are remarkably close to objections against representational models of perception. Let us examine in outline the most significant examples:

a. The intermediate states of sense data, *sensa*, and similar constructs have been extremely difficult to characterize: viewed as external to the mind, unlike physical objects, they were also thought of as phenomenal<sup>30</sup>. Analogously, no satisfactory ontological characterization of intelligible species was given within the Peripatetic conceptual framework.

b. In many modern and contemporary versions of the representational theory of mind, the vehicle of intentional content is bound to become the object of perception<sup>31</sup>. Several authors emphasize that the species is not to be viewed as the immediate object of knowledge. Yet Durandus, Ockham and other Scholastics take it for granted that the species is an intermediate or 'terminating' object, and for this very reason they argue that it obscures (and prevents knowledge of) essences.

c. Once mediating representational principles are introduced, the gap between perception and object cannot be filled by appeal to a "similitude" linking the various moments of the cognitive process<sup>32</sup>. This objection, the thrust of which is to show that the intelligible species are superfluous, is still maintained by modern scholars<sup>33</sup>.

d. The notion of sense impression (viewed as 'missing link') is supposed to solve a problem that cannot be characterized as a causal

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<sup>30</sup> See C.D. Broad, "The theory of *sensa*", in *Perceiving, Sensing, and Knowing*, cit., 85-129; see also D.W. Hamlyn, *In and Out of the Black Box. On the Philosophy of Cognition*, Oxford 1990, 66. Similar properties apply to mental representations; cf. *infra*.

<sup>31</sup> Cf. F. Jackson, *Perception. A Representative Theory*, Cambridge 1977, 19-20 on the intermediate object. See also R. Firth, "Sense-data and the percept theory", cit.

<sup>32</sup> J.R. Searle, *Intentionality. An Essay in the Philosophy of Mind*, Cambridge-N.Y. 1983, 1989, 58-61.

<sup>33</sup> See, in particular, F. Prezioso, *La "species" medievale e i prodromi del fenomenismo moderno*, cit.

problem<sup>34</sup>. Ockham, unflinching critic of the species doctrine, maintains that cognition is a linguistic or semantic process rather than a physical or ontological one, and no longer conceives of cognition in terms of a physiological or ontological relation with the object<sup>35</sup>.

e. Representational models lead to the fallacy of a vicious circularity: intentionality and representation are used to justify each other. Moreover, one can easily slip into an infinite regress concerning representational entities<sup>36</sup>. This argument against representational models of cognition was formulated by Sextus Empiricus<sup>37</sup>, and recurs in the species controversies.

There are other arguments against representational models of perception in general, and against the theory of sense data<sup>38</sup> in particular; however, their connection with discussions on intelligible species is not evident. Accordingly, I shall try to pursue the comparison between representational theories of mind and the species doctrine exclusively on the basis of points (a)-(e), focusing on two issues that deserve particular attention: (1) what (and how) mediates perceptual experience and (2) what counts as an adequate justification for claims to knowledge.

Let us consider the first issue. A representational theory of mind generally presupposes a perceptual experience whose content can-

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<sup>34</sup> G. Ryle, "Sensation", in *Perceiving, Sensing, and Knowing*, ed. R.J. Schwartz, Berkeley 1965, 187-203, in particular p. 202: "In other words, verbs like 'see' and 'hear' do not merely denote special experiences or mental happenings, with special causal antecedents; they denote achievements or tasks, or successes in undertakings."

<sup>35</sup> See G. Leff, *William of Ockham. The Metamorphosis of Scholastic Discourse*, Manchester 1975, p. 4f.

<sup>36</sup> D.W. Hamlyn, *In and Out of the Black Box*, 50-53.

<sup>37</sup> See ch. I, § 1.4.3.

<sup>38</sup> For significant criticisms, see J.L. Austin, *Sense and sensibilia*. Reconstructed from the manuscript notes by G.J. Warnock, Oxford 1962; W. Sellars, "Empiricism and the philosophy of mind", in idem, *Science, Perception and Reality*, London 1963, 127-196; W.H.F. Barnes, "The myth of sense-data", in *Perceiving, Sensing, and Knowing*, cit., 138-167; G. Ryle, "Sensation", cit.; Firth, "Sense-data and the percept theory", cit., 226-38; G. Pitcher, *A Theory of Perception*, Princeton 1971, ch. I; P. Smith and O.R. Jones, *The Philosophy of Mind. An Introduction*, Cambridge 1986, 92-102. See also D.M. Armstrong, *Perception and the Physical World*, London 1961, xi-xii; idem, *The Nature of Mind*, Brighton 1981<sup>2</sup>, 136: "If we remember that perceiving a physical object is a causal relation, and that things do not act causally as undifferentiated wholes, we see that an apple is seen in virtue of seeing much less than the apple."

not be identified with anything in the external world; the species doctrine, by contrast, is subservient to a psychology theorizing the possibility of grasping the essences of material reality.

In the domain of intellectual cognition, the species doctrine postulates a mediation between mind and sensible reality based on principles that are not primarily known, and thus avoids infinite regress in the chain of mediating principles. By contrast, infinite regress is a threat for any representational theory of mind presupposing the existence of intermediate *objects*. According to the species doctrine, intellectual knowledge of a material object is possible only if the human soul possesses a coded version of it; however, no preliminary or implicit awareness of this coded version is required. The species is seen as a similitude, and thus as an instrumental “quo”—namely, as a structural principle or representational device.

Sense data are impressed, whereas intelligible species are not. Sense data theorists were in the grip of a powerful but ultimately misleading metaphor: the mind as a *tabula rasa* upon which the objects of the physical world leave their imprint. The classical doctrine of intelligible species, on the other hand, claims that sensory information is qualitatively processed by the inner senses and the agent intellect; this information is just not “impressed” upon the mind<sup>39</sup>.

Let us now turn to consider the second issue. According to representational models of perception (respectively, the species doctrine), empirical (respectively, intellectual) knowledge is based on primary knowledge consisting of self-authenticating, non-verbal episodes. Each of these episodes, in Peripatetic cognitive psychology, is characterized as “simplex apprehensio”: they concern the essence of a material thing, and the predicates ‘true’ and ‘false’ do not apply to it. The origin of “simplex apprehensio” is ‘subjective’: it is a form of cognition arising from the causality of the agent intellect. Its reference, however, is ‘objective’, since its content is

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<sup>39</sup> See ch. III, conclusion, and R.A. Fumerton, *Metaphysical and Epistemological Problems of Perception*, 121.



causally determined by sensory representations of the material object.

This foundation of intellectual knowledge derives mainly from an exegesis of Aristotle, *De anima*, III.6-8. The status of this construction, a modified version of which is defended by modern empiricism, has been poignantly criticized by Sellars as "the myth of the given"<sup>40</sup>.

Does the species doctrine postulate a similar foundational act? What this doctrine accepts as 'given'<sup>41</sup>, in the act of intellectual knowledge, is not really the species itself: it is rather the fact that the content represented by sensory images, and transformed by the agent intellect in mental content, is sufficient to guarantee the objectivity of intellectual cognition. Thus, the species doctrine postulates that the impact of sense perception can be selectively used by the active feature of the mind. The agent intellect, in its "*conversio ad phantasmata*", grasps the intelligible kernel of material reality, rather than some sort of dematerialized copy or replica of it.

Many features of the species may seem rather vague or problematic—e.g., their status and modes of representation. Other aspects are very appealing, however: for example, the emphasis on the unconscious character of representational devices enables one to overcome—in addition to the problems involved in sense data versions of a representational theory of mind—some difficulties of direct (or naive) realism<sup>42</sup>. Indeed, in contrast with the latter, the doctrine of intelligible species attempts to account for causal aspects of perception without identifying what is immediately present in perception

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<sup>40</sup> W. Sellars, "Empiricism and the philosophy of mind", cit. An examination of this problem goes beyond the scope of this work.

<sup>41</sup> In the sense specified by Sellars, "Empiricism and the philosophy of mind", on p. 165 and p. 169: "the idea that observation 'strictly and properly so-called' is constituted by certain self-authenticating nonverbal episodes, the authority of which is transmitted to verbal and quasi-verbal performances."

<sup>42</sup> This comparison does not concern the moderate innatism assumed in many versions of the species doctrine, according to which the species is elicited from the potentiality of the possible intellect. This aspect should be rather compared with modern innatistic views in the philosophy of mind, such as those of Chomsky. See also below, subsection 5.

(or better, what immediately affects our sense organs) with properties of the object<sup>43</sup>.

Postulating a chain including information-bearing stimuli, sensory mechanisms, as well as sensory and mental representations raises several non-trivial theoretical problems. Alternative courses of analysis, however, are not entirely free from problems either. Consider, for example, the characterization of perception as direct acquisition of beliefs—often presented as a viable alternative to a representational theory of perception and cognition<sup>44</sup>. Naturally, this characterization enables one to dispense with various (problematic) views involved in the representational theory of mind; however, it also trivializes the problem of how sensory experience is mentally processed, and in effect eliminates this problem from the concerns of a theory of knowledge. This position, together with its problematic aspects, emerges already in the criticisms of the species put forward by Henry of Ghent, William of Ockham, and others<sup>45</sup>.

#### 2.4. *Intelligible species as mental representation*

Mental processing (in the case of Peripatetic cognitive psychology: the activity of the agent intellect) is necessary to account for our cognitive relationship with the world. Similarly, its product—the intelligible species defined as mental representation—may be viewed as a necessary postulate in the frame of a theory of mental content. Many medieval and Renaissance Peripatetics seem to argue against various opponents (such as Ockham), that it would be absurd to let the demands of ontological parsimony override those of explanatory adequacy<sup>46</sup>.

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<sup>43</sup> See Mandelbaum, "Towards a critical realism", cit., 221. For the improper character of the distinction between direct and indirect perception, see Austin, *Sense and Sensibilia*, cit. However, as F. Jackson, *Perception. A Representative Theory*, cit., argues on p. 149, also direct realism cannot do without hypothetico-deductive reasoning. This is admitted by Armstrong; see *supra*.

<sup>44</sup> As defended by a follower of Gibson: J. Heil, *Perception and Cognition*, Berkeley 1983; see also P. Smith and O.R. Jones, *The Philosophy of Mind. An Introduction*, Part I, ch. VIII.

<sup>45</sup> See, in general, ch. III and IV.

<sup>46</sup> A similar contemporary argument for mental representations can be found in J.A. Fodor, *Representations. Philosophical Essays on the Foundations of Cognitive Science*, Cambridge-Ma. 1983, 26f.

The functional need for intelligible species can be described roughly as follows: to represent the formal properties of sensible reality in a way that is 'proportionate' to the human mind. Viewing the species as a candidate to fulfil this functional role gives rise to the following questions. What is the nature of intelligible species? And furthermore: how do they represent?

With regard to the former question, let us notice that the species (analogously to mental representations in contemporary cognitive science) is presumed to be inaccessible and unconscious<sup>47</sup>. This feature, which distinguishes both species and mental representations from sense data and the like, jeopardizes the possibility of providing a coherent account of the nature of the intelligible species. As concerns the latter question, let us notice that the 'average' defender of the doctrine stresses the causal role of the intelligible species, primarily regarding it as a bearer of information<sup>48</sup>. The species is also viewed as "similitudo", and this suggests that its representational power arises from a *resemblance* with the object it makes accessible to intellectual knowledge. This does not mean or entail that the object produces a likeness of itself in the mind, as many opponents of the species doctrine seem to suggest. The species is jointly produced by sensory representational devices and the active feature of the mind. Its objective reference, however, is solely due to the former. Sensory representational devices are, in turn, the end products of a 'purification' process, that is, they are the final result of the processing of sensory information by the inner senses. Therefore, the correspondence suggested by the species as similitudo cannot simply be viewed as a pictorial resemblance between species and represented essence<sup>49</sup>. Rather, this correspondence between species and material essences, used for justifying the cognitive adequacy of simple apprehension, seems to be grounded in the (unspecified) law-governed interactions of the physical environment with sense

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<sup>47</sup> See, among others, D.C. Dennett, "Styles of mental representation", in *Proceedings of the Aristotelian Society* 83(1982), 213-226.

<sup>48</sup> As is well-known, the intelligible species is accessible in reflection. However, this kind of knowledge depends upon the knowledge of the outer world which is in turn grounded upon unknown species.

<sup>49</sup> See *supra* in § 1.1.

organs and physiologically accountable capacities of the inner senses.

### 2.5. *Innatism*

The vast majority of authors claiming that intelligible species are necessary also take it that the species are produced by a wired-in capacity (the agent intellect) on the basis of acquired representations (phantasms) present in organic perceptual faculties. Similarly, a generally shared conviction is that human beings are equipped with *a priori* principles of mental operation (“prima principia”), contributing to determine what is acquired. The “prima principia” are in general regarded as dispositional principles whose activation depends on a sensible stimulus<sup>50</sup>.

In the case of Thomas Aquinas, the principles cannot be identified with purely combinatorial devices<sup>51</sup>. The first principles contained in “lumine intellectus agentis” provide, according to Thomas, something more than an associative mechanism, because they ground the mind’s relation with the divine mind. Indeed, this kind of *a priori* assumes the characteristics of an inborn *competence*.

Straightforward nativist accounts of the intelligible species, regarded as contents latently present in the mind, are rather uncommon. James of Viterbo describes the species as inborn “idoneitates” or “aptitudines”, and this may suggest an assimilation between representation of and competence for producing cognitive contents. However, Viterbo’s inborn species are chiefly responsible for the content of our knowledge, whereas the active mind is the capacity to perform mental operations<sup>52</sup>. This view recurs in other authors<sup>53</sup>.

Another aspect of the innateness problem in the species doctrine, which also admits of an interpretation in dispositional terms, has

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<sup>50</sup> Aristotle regarded them in *Posterior Analytics*, II.19, as the result of a quasi-inductive process.

<sup>51</sup> See ch. II, § 3.4.

<sup>52</sup> See ch. III, § 4.5.

<sup>53</sup> In this context, I mean other late 13th century authors such as Henry Bate and Dietrich of Freiberg (ch. III, § 5), the Platonic assimilation of the species doctrine by a Neoplatonic author, such as Marsilio Ficino (ch. VI, § 1.3), or a Simplician Averroist such as Marcantonio Genua (ch. VIII, § 1.1). Also early 13th century authors often suppose innate species; however, they do not yet regard them as instrumental principles; see ch. II, § 1.

been touched upon in our exposition of the positive species doctrine. The specific Aristotelian act-potency scheme entails that the agent intellect does not introduce intelligible species in the possible intellect from without (this would imply a transfer of accidents, ruled out by the Aristotelian doctrine), but suggests a form of production ‘from within’ the potentiality of the possible intellect. (Notice that in this view the immaterial intellect is exempted from the undesirable influence of sensory images.)

It seems legitimate to conclude, insofar as the unacquired capacities for mental operation are concerned, that Scholastic cognitive psychology presupposes, generally speaking, only those capacities needed for producing the intelligible species (such as the agent intellect), whereas the norms according to which the species is integrated in wider epistemic contexts (first principles) are innate. In addition, according to the species doctrine, cognitive contents *qua* possible objects are viewed as being merely potentially present in the human mind<sup>54</sup>.

## 2.6. *Physics and psychology*

A basic tenet of Peripatetic cognitive psychology is that knowledge is acquired through the interaction of mind and the organism with the physical environment. As a consequence of this, object representation is viewed as a biologically grounded capacity of the mind. Retrospectively, this appears to be one of the main reasons for Aristotle’s presentation of his cognitive psychology as anatomy or physiology of knowledge acquisition—and even as some kind of technology of cognition. Indeed, Aristotle’s framework for sense perception and intellectual cognition is largely wrought from the same conceptual tools he uses for analyzing physical and metaphysical issues: form, matter, accident, substrate, motion, alteration. This naturalism is hard to reconcile with Aristotle’s noetics, but the undeniable spiritualistic tendency of the latter does not exclude that he was inclined to conceive of knowledge as a natural act.

A note about this naturalistic approach to perception and mental representation is in order here. Peripatetic outlines of a naturalized

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<sup>54</sup> In the concluding section of this volume (ch. V, § 4), I will consider again the character of the innatism involved in Peripatetic psychology.

account of knowledge acquisition based on perception suffer from a major difficulty: it is hard to understand in a detailed fashion how conceptual tools developed for the domain of sensible reality can be used for phenomena belonging to the mental realm<sup>55</sup>.

In Scholastic and Renaissance Peripatetic psychology, the extensive use of concepts borrowed from physics in analyses of mental phenomena brings out some of the problems that, *in nuce*, were already present in Aristotle. For example, Aristotle fails to provide a sharp definition of mental content and representation, and puts forward a rather cryptic identity claim between mind and forms detached from matter. His medieval and Renaissance followers, emphatically claiming the immateriality of mind, try to bridge the gap between mind and matter with the theory of species—at least insofar as the latter is supposed to ground the mental representation of cognitive contents. These attempts, however, are constrained by the Aristotelian legacy of a physicalist approach in cognitive psychology.

No traditional Peripatetic psychologist theorizes the identity between phantasms and mental states<sup>56</sup>. Moreover, I strongly disagree with interpreting Aristotle's cognitive psychology in terms of an identity theory or materialistic conception of mind, even though there are developments of Aristotle's ideas along these lines—in Hellenistic philosophy, as well as in contemporary interpretations of Aristotle's philosophy of mind<sup>57</sup>. In this respect, it is worthwhile pointing out that the theory of *impressed* intelligible species—in the version rejected by Henry of Ghent (and others), and yet endorsed by many Peripatetic authors—presupposes just some kind of one-

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<sup>55</sup> For a discussion of how Aristotle's psychological conceptions relate to contemporary philosophy of mind, see ch. I, § 1.3.

<sup>56</sup> For contemporary discussion on the relationship between brain states and mental phenomena, see N. Block and J.A. Fodor, "What psychological states are not", in *Readings in Philosophy of Psychology*, ed. N. Block, vol. I, London 1980, 237-250, and N. Block, "Troubles with functionalism", in *idem*, 268-305.

<sup>57</sup> See, for discussion of recent opinions, ch. I, § 1.3. In fact, the precise relation between phantasm and intelligible species was an eternal apple of discord in the Peripatetic psychological debates. A rather exceptional position is developed by Buridan, who identifies, in his final *De anima* exposition, the intelligible species with the phantasm; see ch. IV, § 3.2.

to-one correspondence between physically organized representational devices and mental representations<sup>58</sup>.

An appealing feature of this Peripatetic program is that of embodying a fundamentally biological approach to cognition: the capacity for representation is biologically grounded, and this suggests the possibility of providing an account of cognition dispensing with any inner and privileged mental realm. The majority of medieval and Renaissance Aristotelians, although generally stressing the immateriality of mind, endorse essential features of this methodological standpoint: the mind is the form of the body, and the processes leading up to perception and cognition are not directly accessible to mental inspection.

### § 3. SENSIBLE AND INTELLIGIBLE SPECIES

Peripatetic cognitive psychology distinguishes, roughly speaking, between three stages in knowledge acquisition: sense perception, apprehension of single essences, and discursive reasoning. The controversies about intelligible species concern the second stage in this hierarchically organized process.

In producing intelligible species, the human mind<sup>59</sup> represents a potentially intelligible (sensible) content at the mental level. This is the stage of cognition I shall be addressing in this study, only marginally examinizing the historical doctrines about the role of sense perception, viz. the impact of sensible species. The ways in which conceptual knowledge develops according to Peripatetic epistemology is not critically examined here. The exclusion of sensible species from the scope of this work is motivated by various considerations<sup>60</sup>.

In the first place, in Peripatetic cognitive psychology sense perception is an act of the soul-body complex, whereas cognition is a

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<sup>58</sup> For arguments against impressed species, cf. ch. III, § 6 conclusion. For a contemporary discussion regarding the impossibility of establishing a correspondence between neural patterns and mental states, see also St. Priest, *Theories of Mind*, London 1991, 6f.

<sup>59</sup> Notice that also most medieval, and many Renaissance Averroists defend the necessity of intelligible species.

<sup>60</sup> There will be, however, some exceptions: Aquinas' considerations on sensible species, e.g., illuminate significantly his doctrine of intelligible species.

mental act. Intelligible species are considered here for their crucial role in the constitution of the mental order; by the same token, sensible species are only marginally relevant to this investigation. For the medieval and Renaissance authors discussed here, the intelligible species characterizes the transition from sense perception to intellectual cognition. Abstracted from sensory representational devices, it possesses the mark of the mental. In contrast, sensible species, operating only within sense perception, belong to the order of material reality.

Secondly, the contributions of sensible and intelligible species to sense perception and intellectual cognition, respectively, are too different to justify a joint analysis. Sensible species originate from the synergy of external object and sense organs: they are, indeed, features of the environment impinging on the sense organs. Their impact on sense organs is transformed by the physiologically organized inner senses and results in *perceptual* representations, that is, phantasms. Intelligible species, by contrast, are produced and received by the human mind; they are probably best seen as *mental* representations.

Finally, my methodological decision can also be defended on historical grounds. Some authors accept sensible species, but reject intelligible ones<sup>61</sup>. Their motivation is that the sensible species strictly belong to the material order, as regards both status and function, while intelligible ones—though originating in sensory representational devices—are viewed as mental.

The distinction between the roles of sensible and intelligible species is to be understood from the broader perspective of the relation between sense perception and intellectual cognition envisaged in Peripatetic cognitive psychology. Sense perception, for the 'orthodox' Peripatetic, has a cognitive task to perform only insofar as it prepares cognition<sup>62</sup>. At variance with a widely shared view in

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<sup>61</sup> See, for instance, the position of Henry of Ghent, discussed in ch. III, § 3.2.

<sup>62</sup> Tachau's observation in *Vision and Certitude*, cit., on p. 10, note 19, regarding the cognitive task of sense perception, remains somewhat puzzling: "Modern philosophers, from Descartes onward, have frequently confused or conflated the two [scil. sensitive and intellectual cognition], usually without regard to the merits of theories assigning specific cognitive—but not rational—operations to the senses. The legacy of this confusion for the historiography of medieval philosophy has been the tendency to forget that when one has described a late medieval scholar's view on either sensitive



contemporary cognitive psychology, Peripatetics thought that perception was not concept-dependent<sup>63</sup>, and thus its strictly sensuous dimension could be easily detached from the epistemic context of intellectual activities. Although Peripatetics probably considered perception as transcending the level of a purely bodily process<sup>64</sup>, they did not regard perceptual representations as depending for their existence upon conceptualisation<sup>65</sup>. To the Aristotelian proponents of intelligible species, sense perception as such is unable to produce the symbolic representations needed for intellectual cognition<sup>66</sup>.

#### § 4. PREVIEW

Medieval discussions of mental representation are constrained in essential ways by Thomas Aquinas' doctrine of intelligible species. Thomas developed his view of a formal mediation in intellectual cognition on the basis of Aristotle's cognitive psychology and the Arabic theories of abstraction and intention. Arabic commentators, in turn, embodied Hellenistic ideas on cognitive impressions and mental representations in their interpretation of Peripatetic cognitive psychology.

The first two chapters trace the prehistory of Aquinas' doctrine of the intelligible species. Chapter I is devoted to the Ancient and Arabic sources. Chapter II focuses on the reception of Peripatetic psychology in the Latin West and examines the various meanings attributed to the term "species" by early 13th-century authors. Furthermore, Albert the Great's cognitive psychology and Roger Bacon's theory of the multiplication of species are examined in some detail. The last section of chapter II is devoted to Thomas,

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cognition or intellectual cognition, one has not yet treated that scholar's entire account of natural cognition."

<sup>63</sup> D.W. Hamlyn, *In and Out the Black Box*, cit., argues for perception as concept-dependent, whereas J.A. Fodor, *A Theory of Content and other Essays*, Cambridge (Ma.) 1990, 199f, analyzes perception as essentially encapsulated; see also § 2.1.

<sup>64</sup> See ch. I, § 1.3 for Aristotle's specific views on the alteration involved in sense perception.

<sup>65</sup> For a similar position in Stoic philosophy, see Sorabji, "Perceptual content in the Stoics", in *Phronesis* 35(1990), 307-314.

<sup>66</sup> It was noticed above that Aristotle made the same distinction between sense perception and intellectual cognition, without, however, postulating the necessity of appropriate mediating mental representations.

who argued for the necessity of formal mediation in intellectual knowledge, based upon unknown and instrumental species or representations, and abstracted by the human mind from sensory representational devices. As a systematic and original synthesis of the previous 13th-century speculation on the relation between mental representation and cognitive content, Thomas' arguments serve as a starting point for later medieval discussions.

Shortly after the 1277 edict of Bishop Tempier of Paris, Henry of Ghent, secular master in theology at the University of Paris, launches a first systematic attack against the doctrine of intelligible species. His terminology and arguments suggest that his opposition is directed against an intelligible species interpreted in terms of Roger Bacon's doctrine of the multiplication of species. The latter, however, assumed that a chain of impressed species can explain no more than the mechanisms of sense perception in general, and those involved in visual experience in particular. Henry, with his interpretation of the intelligible species as originating exclusively in sensory experience and, what is more, as *impressed* upon the human mind, amalgamates the doctrines of Thomas and Bacon. As a consequence, his understanding of Aquinas' doctrine is seriously flawed.

Henry's position is not isolated. The criticisms of other opponents show clearly that a syncretistic conception of the intelligible species is being discussed. And eventually, even supporters of the species, such as John Duns Scotus, accept *de facto* the terminology of their opponents, allowing expressions such as "impressed intelligible species".

In the following chapters of this first part, the various positions *pro* and *contra* the intelligible species are discussed. In this introduction, it is appropriate to indicate only very general distinctive features of the overall discussion. At first glance, the issue of the intelligible species seems to divide Aristotelians from Augustinians, and philosophers from theologians. A deeper examination reveals a more complicated pattern, however. Initially, criticisms are directed against naturalistic interpretations of the doctrine of intelligible species, and are based on the claim that the immaterial soul cannot be affected by principles or entities originating in physiologically embedded sensory representations. The authority of Augustine is

frequently invoked in support of this claim. However, this father of the church envisages, in *De Trinitate*, a series of "species" starting in bodily reality, and reaching up to the rational soul. Therefore, Augustine can be, and is indeed, used by defenders *and* opponents of formal mediation in intellectual cognition. As a general consequence of the theological concern for the immateriality of the human soul, the discussion about intelligible species is dominated largely by the problem of how the relation between the active mind and the sensory representational devices is to be characterized.

The anomaly of the species debate becomes more evident if we notice that the lines of doctrinal influence between the various authors involved cross the borders of monastic orders and philosophical movements. Giles of Rome, for instance, the first and most influential master of the Augustinian Hermits, accepts the doctrine of intelligible species; and notwithstanding the presence of distinctive Neoplatonic tendencies in his psychology, he even emphasizes the role of phantasms in the production of mental representations. His views exercise a strong influence on later philosophers of his order. Most likely, he also influenced the views of John of Jandun, the 14th-century champion of Latin Averroism, and some of his followers on the specific issue of the generation of intelligible species by representations of the inner senses.

Most medieval Averroists after Jandun accept the doctrine of intelligible species. Franciscans and Dominicans, by contrast, are internally divided. In the Order of Minors, for example, Duns Scotus, defends the intelligible species against Henry of Ghent and Godfrey of Fontaines, secular masters in theology, and against his brother Peter Olivi; Ockham, on the contrary, attempts to eliminate the doctrine of species once and for all, and proposes a fundamentally new approach to the problem of knowledge acquisition. The Dominicans mostly abide by Aquinas' teachings. There are, however, outstanding exceptions, such as Durandus of Saint Pourçain. Influential representatives of this order, such as Thomas Sutton, suggest essential modifications; others, such as Hervaeus Natalis, express strong reservations.

As we shall see, discussions on the intelligible species become less frequent and stimulating during the 15th century. There are few doctrinal innovations on mental representation, but nonetheless

some historically significant positions emerge. Capreolus, John Versor and Peter Crockaert reflect on the Thomistic legacy, from different points of view, and prepare the 16th-century revival of Scholastic philosophy. Furthermore, the work of some Albertists—for example Heymeric de Campo and John of Malinas—foreshadows the adoption of Peripatetic psychology by Renaissance Platonics. Other authors, such as Paul of Venice and Gaetano of Thiene, play a significant mediating role in the transmission of psychological views of medieval schoolmen and philosophers to the first generation of philosophers in the School of Padua.

## CHAPTER ONE

### ORIGINS OF THE *SPECIES INTELLIGIBILIS* IN ANCIENT AND MEDIEVAL THOUGHT

Ancient and Arabic philosophy are the two main sources of 13th-century speculations on intelligible species<sup>1</sup>. Platonic and Aristotelian views of perception and intellectual knowledge are the chief background elements for medieval and Renaissance disputes on the nature and function of formal principles in human cognition. The theory of intentional species, however, was also foreshadowed by Hellenistic discussions of mental processing of sensory information. In particular, one finds strikingly detailed anticipations of medieval and Renaissance debates on the necessity of intelligible species in the Stoic doctrine of cognitive impression and the related criticism of the Sceptics. These influences of classical philosophy on the categorial framework for the species doctrine are discussed in the first section of this chapter.

References to Ancient authors increase significantly in discussions on the intelligible species by Spanish schoolmen, with the aim of showing that some Ancient authors—most notably including Theophrastus, Themistius, Galen, and Porphyry—already examined and rejected the necessity of species in sense perception or intellectual cognition. The second section of this chapter analyzes the rather peculiar idea of an ‘Ancient opposition’ against the species, focusing on the historical causes and doctrinal motives for this invention of Spanish schoolmen.

The Arabic notions of *ma‘na* and *ma‘qul*, both translated as “intentio” by medieval Latins, play a crucial role in the transition from classical Peripatetic and Hellenistic cognitive psychology to 13th-century views on formal presuppositions of knowledge. The

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<sup>1</sup> On the role of Augustine’s thought in the species controversy, see ch. III, § 1.

third section of this chapter is devoted to examining the role assigned by Arabic authors to “intentio” in sense perception and intellectual knowledge, while the fourth and final section focuses on broader terminological aspects of the species controversy.

### § 1. CLASSICAL PHILOSOPHY: WHERE IT ALL BEGAN

Most medieval and Renaissance advocates of the *species intelligibilis* appeal to Aristotle’s views of sensation and knowledge and thus, at least implicitly, also to the context of Platonic and Presocratic doctrines within which the Aristotelian conception developed. Furthermore, there are close conceptual connections, mentioned earlier, between Epicurean *prolepsis* and Stoic cognitive impression, on the one hand, and medieval and Renaissance views on mental representation, on the other hand.

In view of broadly contextual and more specific conceptual relationships, it is only superficially surprising that medieval and Renaissance disputes on the necessity of intentional species were partly anticipated by discussions between Stoics, Epicureans and their Sceptic opponents. It was, however, only an ‘ideal’ anticipation: most Hellenistic philosophers and schools were mentioned only incidentally, if at all, by medieval authors, who knew them fragmentarily, and often only through secondary sources. Arabic culture played a crucial role under this respect also: Arabic philosophers and scientists, who acted as a *trait-d’union* with the Latin West, were strongly influenced by Hellenistic philosophy and, most significant for our present concerns, by Hellenistic *cognitive psychology*.

This section focuses exclusively on those doctrinal sources of the species theory in *classical* thought that are relevant to the developments of the species debate—i.e. discussions on mental representations, and the necessity of formal principles or entities in sense perception and intellectual knowledge. Thus, no comprehensive outline of Ancient cognitive psychology is to be found here; and no special emphasis is placed on the originality of my interpretations. The aim is simply that of providing the reader with a selective—sometimes only cursory—overview of authors and issues tracing the origins of the terminological and conceptual tools accumulating

in medieval speculations on the nature and function of formal principles in intellectual knowledge.

### 1.1. *Sense perception in the Presocratic world*

A view of knowledge as explicit interaction with sensible reality is widely shared by Presocratic philosophers. From the very beginnings of Presocratic philosophy, perception is conceived of as a state linking the perceiver with the surrounding world; knowledge is characterized in terms of the relations between soul and its external object<sup>2</sup>. Although there is no explicit reflection on the formal mediation between observation and theory, it is significant that mental contact with reality is no longer considered as self-evident<sup>3</sup>.

Parmenides' totally formal solution to the problem of human knowledge, which rejects the world of sense perception as an adequate object of cognition, cannot be missed even in a cursory survey of the prehistory of cognitive psychology. His epistemology sharply contrasts with, and may even be regarded as the exact opposite of, later Peripatetic conceptions of intentional species mediating between sensible reality and intellectual knowledge. However, human thinking occupies unmistakably a special place in Parmenides' strictly monistic framework: it is essentially directed at an object beyond itself. Thus, Parmenides assumes that thinking is somehow dependent on its object<sup>4</sup>. For this very reason, he may be

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<sup>2</sup> Cf. A. Finkelberg, "'Like by like' and two reflections of reality in Parmenides", in *Hermes* 114 (1986), 405-412, on pp. 405-406.

<sup>3</sup> Cf. J. Baillet, "Epistémologie présocratique et linguistique", in *Les Études Philosophiques* 56 (1981), 1-8, on p. 8 and J.L. Lesker, "Heraclitus' epistemological vocabulary", in *Hermes* 111 (1983), 155-170, on p. 165. For a general discussion of the origins of Presocratic epistemology, see E. Hussey, "The beginnings of epistemology", in *Companions to Ancient Thought*, vol. I: *Epistemology*, ed. St. Everson, Cambridge 1990, 11-38. I partially disagree with G. Romeyer Dherbey, "L'âme est, en quelque façon, tous les êtres (Aristote, *De anima*, III.8, 431b21)", in *Elenchos* 8 (1987), 363-380, who characterizes, on pp. 366-370, the relation of the human soul with the world in Presocratic thought as a circulation system, and compares the Presocratic soul to a Greek temple, open to the whole world.

<sup>4</sup> See *Die Vorsokratiker*, Auswahl der Fragmente, Übersetzung und Erläuterungen von Jaap Mansfeld, 2 vols., Stuttgart 1983-1986, vol. I, Fragm. 11 (= *Diels-Kranz* 28 B 8), 35-36; for discussion, see J. Hintikka, "Parmenides' cogito argument", in *Ancient Philosophy* 1 (1980), 5-16, on pp. 5-6. This preference for a goal-directed model of knowledge denotes a tendency with Greek philosophers to think of cognitive matters from the point of view of someone's personal acquaintance-situation. See also J.

viewed—quite paradoxically—as paving the way for later accounts to the effect that human thought depends on representational devices grounded in the physiological structure of sense perception.

Empedocles approaches the psychology of human cognition from a different angle: perception and thought are not exclusively human traits. He analyzes sensible world and perception in homogeneous terms, and describes the latter as an interaction between two bodies<sup>5</sup>. Perception occurs when a physical object interacts with the human body. He maintains, therefore, that biology and physiology provide sufficient means to account for the phenomena of perception.

What are the basic features of Empedoclean perception? It is a physiological process based on an active property of external bodies, which produce “effluences”, and on a passive property of our body, which receives these detached particles<sup>6</sup>. Actual perception is just the union of some effluences with similar particles in our body, mostly located in heart and blood<sup>7</sup>. A successful interaction depends upon the excellence of the relevant mixture (of elements) in our body.

Empedocles distinguishes, at least in principle, between thought and perception; at the same time, however, he emphasizes their mutual dependence. Although he does not establish a precise causal link or dependence relation between them, Empedocles regards perception and thought as part of the physical world. As a matter of fact, by assimilating thought to perception, he reduces both to the elements, and considers them as different aspects of one and the same phenomenon. Described in the vocabulary of physics, also thought depends upon an even mixture of elements<sup>8</sup>. Thinking is viewed by Empedocles merely as a species of perception, insofar as

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Hintikka, “Knowledge and its objects in Plato”, in idem, *Knowledge and the Known*, Dordrecht 1974, 1-30.

<sup>5</sup> Fragm. 138-39 (= DK 31 B 107 and 109), in *Die Vorsokratiker*, ed. cit., vol. II.

<sup>6</sup> Fragm. 127, 128 (= DK 31 A 86).

<sup>7</sup> Fragm. 141 (=DK 31 105).

<sup>8</sup> Fragm. 144 (= DK 31 B 110); for discussion of this issue, see A.A. Long, “Thinking and sense-perception in Empedocles: mysticism or materialism?”, in *Classical Quarterly* 60(1966), 256-276, on pp. 268-69.



it requires physical communication between the percipient individual and the objects in the external world<sup>9</sup>.

Empedocles' explanation of the psychology of human cognition paves the way for subsequent materialist accounts of sense perception and mental acts<sup>10</sup>. One of Aristotle's interlocutors at least insofar as cognitive psychology is concerned, his name will frequently appear in the *De anima*-commentaries<sup>11</sup>.

Empedocles' naturalism in psychology is taken up and developed into a causal theory of perception by Democritus. In effect, Democritus may be regarded as the first Greek author undertaking a detailed analysis of perception as a *process*: the object of perception is not the sensible thing itself, but should be seen as the outcome of the interaction between the sensible thing and sense organ. Thus, the medium in which the interaction takes place has an essential role to play in perception<sup>12</sup>. Things transmit strings of atoms that represent them. In turn, these strings communicate their structure to the medium. In the specific case of vision, for example, this structure is communicated to the air. In this modified medium, the atom-strings and a lightbeam departing from the eye meet. Only after this contact, the sun and the daylight communicate atom-strings to the eye. Visual perception is thus based on the emission of luminosity. The representational atom-strings are called *eidola* or 'images'<sup>13</sup>.

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<sup>9</sup> Cf. A.A. Long, "Thinking and sense-perception", 272: this conception foreshadows the *homologia* of Stoicism.

<sup>10</sup> The works of Democritus and Epicurus, perception theories of Arabic authors and 17th-century authors, such as Hobbes and Gassendi.

<sup>11</sup> Cf. Thomas Aquinas, *In Aristotelis librum de anima commentarium*, I, lectio IV, 43; idem, *Summa theologiae*, I, q. 84, a. 6, ad resp.; John Versor, *Quaestiones super tres libros De anima Aristotelis*, Cracovie 1514, 137v. See also authors of the Italian Renaissance and the Second Scholasticism: for instance, Marcantonio Zimara, *Quaestio qua species intelligibiles ad mentem Averrois defenduntur*, Av<sup>o</sup> and Cosmus Alemannus, *Summa philosophiae*, Parisiis 1639, 152b.

<sup>12</sup> *Die Vorsokratiker*, vol. II, Fragm. 88 (=DK 68 A 135); for discussion, see J. Mansfeld, in *Die Vorsokratiker*, vol. II, 9. Kapittel: "Die Atomisten: Leukipp und Demokrit", 239.

<sup>13</sup> Fragm. 103 (=DK 68 A 135) and 106 (=DK 68 A 77). Democritus is often cited in the later species debate; see, for example, Collegium Conimbricense, *Commentarii in tres libros De anima Aristotelis Stagiritae*, Venetiis 1616, 303b, where he is referred to for the view that an *intellectus agens* is not needed, because species are supposed to have their exclusive origin in sensible reality.

Clearly, things are not perceived as they really are, but only as objects of perception determined by our sense organs. This thesis—which cannot be regarded as an anticipation of later views of Cyrenaics or Sceptics, at least not insofar as Democritus is convinced that the objects of perception represent the structure of things as they are<sup>14</sup>—bears a meaningful relation to the Scholastic theory of species. Indeed, many opponents of the species argue that this doctrine, by replacing the real object with a representational entity, introduces additional difficulties for a coherent explanation of how knowledge of the external world is possible<sup>15</sup>.

The physiological approach to explaining perception, only partially endorsed by Aristotle, reappears in the epistemology of Epicurus and the Stoics. Perceptions are firmly located in the natural world, which includes both the perceiving subject and the external object of perception. The emphasis on the effective alteration of human soul by sensory images foreshadows the species doctrine of 13th-century perspectivist optics<sup>16</sup>.

## 1.2. *Plato's critique of perception in Theaetetus*

Plato's thorough criticism of sense perception as a basis for real knowledge is the proximate source of Aristotle's psychology of cognition in *De anima*. In his analysis of how sense perception develops, Plato attempts to show that the latter cannot be regarded as the origin of reliable mental or cognitive representation. The use of Plato's nativist account of intellectual knowledge in several medieval and Renaissance views about intelligible species is discussed in another part of this study. Here, I shall be concerned with

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<sup>14</sup> For discussion, cf. L. Couloubaritis, "Considérations sur la notion de Noûs chez Démocrite", in *Archiv für Geschichte der Philosophie* 62 (1980), 129-145, in particular pp. 142-45. However, Democritus is quoted by Sextus Empiricus, *Adversus Mathematicos*, VII.137: "it will, however, be plain that it is impracticable to learn the veritable nature of each thing." According to the Cyrenaic school, founded in the 4th century B.C. by Aristippus, only one's own affections can be apprehended; cf. Sextus, *Adv. Math.*, VII.191f. Subsequently, the Sceptics casted doubt on the capability of the senses to inform us about the external objects.

<sup>15</sup> See, e.g., ch. III and IV. See also, in general, the theories of an intermediate object in modern sense data accounts, discussed in the Introduction.

<sup>16</sup> For an assessment of the impact of these views on the intelligible species controversy, see ch. II, § 2.3 and ch. III.

Plato's direct influence on Aristotle's theory of perception, which is in turn the kernel of the medieval doctrine of cognitive species.

In the *Theaetetus*, when examining the claim that knowledge stems from the senses, Plato endorses the broad view of perception as an interaction between the individual and the external world<sup>17</sup>. The *Theaetetus* introduces the fundamental idea that perceptual qualities are to be thought of as joint products of sense organs and material objects. The upshot of the discussion in the *Theaetetus*, concerning the world of appearances, is that knowledge cannot be extracted from sensible experience if one does not take into account the world of true being. In particular, Socrates points out that the identification of perception with knowledge entails that perception is infallible and that its object is the real<sup>18</sup>. And an argument presented in the dialogue purports to show that sense perception does not possess these marks. With certain qualifications, it may be called infallible; it does not have the real as its object, however.

At a crucial point of the *Theaetetus*, views of Protagoras and Heraclitus are discussed, and Plato states what he does and does not accept from them<sup>19</sup>. It is well known that, in the *Theaetetus*, the attempt to justify the definition of sensation as knowledge comprises an epistemological element, borrowed from Protagoras, concerning the subjective nature of perception, and an ontological element, borrowed from Heraclitus, regarding the nature of sensible reality. The theory developed on this basis presents a set of conditions that are sufficient for justifying Theaetetus' definition. However, since it is argued that this is the only possible set of sufficient conditions, it follows that the sufficient conditions are also necessary conditions for the definition. Thus, anyone who identifies knowledge with perception is committed to these conditions. This conclusion is the basis for showing that the fully elaborated Protagorean-Heraclitean framework leads to absurdities. Indeed, the

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<sup>17</sup> For a discussion of Plato's general views on perception, see N. Gulley, *Plato's Theory of Knowledge*, London 1962, ch. 2, pp. 70-107, and ch. 3, pp. 120-138; J.M. Cooper, "Plato on sense-perception and knowledge (*Theaetetus* 184-186)", *Phronesis* 15(1970), 123-146; A. Silverman, "Plato on perception and «commons»", in *Classical Quarterly* 84(1990), 148-175.

<sup>18</sup> *Theaetetus*, 152c.

<sup>19</sup> *Theaetetus*, 151e-f.

structure of Plato's argument is essentially that of a *reductio ad absurdum*<sup>20</sup>.

In the *Theaetetus*, Plato makes use of Protagoras' views in his argument for the subjective nature of perception, and in his subsequent argument against the infallibility of perception<sup>21</sup>. At the same time, Plato introduces from Heraclitus the thesis that "All things are in motion"<sup>22</sup>. In the light of these general claims, he analyzes the genesis and nature of sensation. The quality I perceive has objective reference only within a restricted temporal interval, and only for an individual percipient, because it arises at the moment of perception:

From the intercourse and friction of these with one another arises offspring, endless in number, but in pairs of twins. One of each pair is something perceived, the other a perception, whose birth always coincides with that of the thing perceived.<sup>23</sup>

In view of its active reciprocity, sensation, which is dominated by two motions, cannot be exclusively attributed to the percipient or the sense organ, nor alternatively to the object, because neither one has fixed qualities.

The existence and nature of the object of perception depend on the act of perceiving as well as on the structure of the external object. Indeed, any particular perception involves an interaction between an acting object and a sense organ which is acted upon. In turn, the interaction produces a perception and a perceived thing:

As soon, then, as an eye and something else whose structure is adjusted to the eye come within range and give birth to the whiteness together with its cognate perception—things that would never have come into existence if either of the two had approached anything else—then it is that, as the vision from the eyes and the whiteness from the thing that joins in giving birth to the colour pass in the space between, the eye becomes filled with vision and now sees, and becomes, not vision, but a seeing eye; while the other parent of the colour is saturated with whiteness and becomes, on its side, not

<sup>20</sup> For a more detailed analysis see: J. McDowell, *Plato. Theaetetus*, translated with notes, Oxford 1973, 130f, and M.F. Burnyeat, "Idealism and Greek philosophy: What Descartes saw and Berkeley missed", in *Philosophical Review* 91(1982), 3-40, on p. 4f.

<sup>21</sup> See F.M. Cornford, *Plato's Theory of Knowledge. The Theaetetus and the Sophist of Plato Translated with a Running Commentary*, London 1979 (first edition 1935), pp. 32-36 on Plato's interpretation of Protagoras.

<sup>22</sup> *Theaetetus*, 152d.

<sup>23</sup> *Theaetetus*, 156a-b (transl. by Cornford). See F.M. Cornford, *Plato's Theory of Knowledge*, 39.

whiteness, but a white thing, be it stock or stone or whatever else may change to be so coloured.<sup>24</sup>

Since percipient and sense object cannot exist apart from each other, Plato denies that “being” can be ascribed to the object independently of the percipient. Two consequences of Plato’s account of the mechanism of perception should be emphasized here. Firstly, perceptual qualities are properly ascribed to things only in relation to perceivers. And secondly, being dependent on individual perceivers, perceptual qualities are radically unstable. This interpretation proves fatal to the claim that perception is knowledge of (true) reality<sup>25</sup>.

### 1.3. Aristotle on sense perception and intellectual knowledge

In contrast with Plato, Aristotle claims that sense perception captures what is “real”. He emphasizes the receptive character of perception<sup>26</sup>, arguing that it is not liable to ‘subjective’ interventions, and that it concerns forms without matter. He concludes on this basis that perception provides a proper starting point for intellectual knowledge. Unlike Plato, Aristotle does not regard sensible qualities and perception as “twin” products of the interaction of sense organ and external object<sup>27</sup>. He exploits the notion of simultaneous realization of the potential for being perceived and the potential to perceive—possessed by the object and, respectively, by the percipient—to argue that there is a single realization of both. Roughly speaking, an episode of perception occurs when an object impinges, via an appropriate medium, on a sensory organ. Once the sensory input is transmitted by the organ, the percipient subject becomes an actual perceiver and the object becomes an actually perceived thing.

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<sup>24</sup> *Theaetetus*, 156d-e. D.K. Modrak, “Perception and judgment in the *Theaetetus*”, in *Phronesis* 26(1981), 35-54, calls this theory “phenomenalist” because, according to the theory, the features of the perceptual object depend upon the features of the percipient organ and the external world; cf. in particular pp. 38, and 40-41. For definitions of perception in Plato, see also *Philebus*, 34a and *Timaeus*, 45c-d. On sense perception in *Phaedo* and *Republic*, see M.L. Morgan, “Sense-perception and recollection in the *Phaedo*”, in *Phronesis* 29(1984), 237-251.

<sup>25</sup> *Theaetetus*, 157e-160e.

<sup>26</sup> For the active aspects of perception in Aristotle, see Th. Ebert, “Aristotle on what is done in perceiving”, in *Zeitschrift für philosophische Forschung* 37(1983), 181-198.

<sup>27</sup> See *Theaetetus*, 156a-57a.

The "twins" of the *Theaetetus* now become two descriptions of the same process.

Let us now consider, in some more detail, the doctrine of perception presented in *De anima*<sup>28</sup>. Aristotelian perception is an intentional and causal transaction between the senses and the world<sup>29</sup>. It is a kind of alteration producing an affection of the soul<sup>30</sup>. Although realized in matter, perception cannot be identified with any merely material interaction. Perceiving is a special sort of change in the perceiver: the objects of perception, acting via some medium, causally affect the perceptual apparatus; and the apparatus changes inasmuch as it receives the form of the object without its matter. Thus, perceptual changes are to be distinguished from other

<sup>28</sup> V. Kal, *On Intuition and Discursive Reasoning in Aristotle*, Leiden 1988, on p. 68, characterizes Aristotle's ideas in *De anima* as cognitive psychology and his thought in *Posterior Analytics* as epistemology. Though basically agreeing with this classification, I wish to emphasize the difficulty of distinguishing sharply in Aristotle and his medieval and Renaissance followers between psychology and theory of knowledge. Whenever I use the word 'epistemology', I intend it in the narrow sense of an account about how the mind grasps its objects. D.W. Hamlyn, *Aristotle's De Anima; Books II and III*, Translated with Introduction and Notes, Oxford 1978 (first edition 1968), 103, is convinced that Aristotle tends to run thinking and knowing together; knowledge, however, must always be about what exists, whereas the objects of thought may be said to exist only as *intentional objects*. For a correction of this view, see M.V. Wedin, "Aristotle on the mechanics of thought", in *Ancient Philosophy* 9(1989), 67-86, on p. 72. For a survey of the recent interpretations of perception in Aristotle, see M.C. Nussbaum, "Aristotelian dualism: Reply to Howard Robinson", in *Oxford Studies in Ancient Philosophy* 2(1984), 197-207, on pp. 201-203 and D.W. Modrak, *Aristotle. The Power of Perception*, Chicago-London 1989 (first edition 1987), p. 4.

<sup>29</sup> For rival, though in a certain sense complementary, accounts of Aristotle's theory of perception, see J. Barnes, "Aristotle's concepts of mind", in *Proceedings of the Aristotelian Society* 72(1971-2), 101-114 and R. Sorabji, "Body and soul in Aristotle", in *Philosophy* 49(1974), 63-89. Barnes, o.c., 108-109, defines Aristotle's theory as a weakly physicalistic account of perception, whereas Sorabji, o.c., 64-70, analyzes Aristotle's biological conception of human soul, underscoring the fact that no perceptual act can be purely mental, since every 'pathos' of the soul is, among other things, a physiological process. Recently, Sorabji's view has been challenged by M.F. Burnyeat, "Is an Aristotelian philosophy of mind still credible?", in *Essays on Aristotle's De anima*, eds. M.C. Nussbaum and A. Oksenberg Rorty, Oxford 1992, 15-26; in the same volume, Sorabji's opinion is endorsed by S.M. Cohen, "Hylomorphism and functionalism", 57-73. See also *infra*.

<sup>30</sup> *De anima*, 416b32 and 415b24. On the ambiguity between sensation and perception, see D.W. Hamlyn, *Aristotle's De Anima*, 88-89. For a more general discussion of this issue in Greek philosophy, cf. idem, *Sensation and Perception. A History of the Philosophy of Perception*, London 1961, ch. I-II, in particular p. 24, where Hamlyn characterizes "being affected" as a necessary condition for sensation and as a merely sufficient condition for sense perception. See also H.J. Blumenthal, *Plotinus' Psychology. His Doctrine of the Embodied Soul*, The Hague 1971, 67, nt. 1.

changes<sup>31</sup>, presumably because the effect of the sensible form, detached from its material substrate, does not inhere in the sense organ in the same way as it inheres in the physical object. Indeed, the reception of the form without matter means that the soul becomes in form equal to the sensible object. Notice, however, that no forms flit from the objects to our sense organs. In Aristotle's view, actualizations of the senses result causally from the action of perceptual objects, although nothing material *as such* penetrates the soul. These actualizations, *qua* physiological changes, trigger perceptual states grounding *discriminative*, and subsequently more narrowly defined *mental* acts<sup>32</sup>. It is thus not surprising that Aristotle describes perceptual states in both mental and physiological terms<sup>33</sup>.

<sup>31</sup> *De anima*, 417b2f: the sensible object stirs the sense to act. See also *De anima*, 431a5f and *Physics*, VII.2, 244b7-245a1. This view will be resumed by Alexander of Aphrodisias; cf. *De anima*, ed. I. Bruns, Berlin 1887, 83, ll. 13-22.

<sup>32</sup> Cf. C.C.W. Taylor, "Aristotle's epistemology", in *Companions to Ancient Thought*, vol. I: *Epistemology*, ed. St. Everson, Cambridge 1990, 116-142, on pp. 138-139.

<sup>33</sup> Cf. M.C. Nussbaum, "Aristotelian dualism", 203. This ambivalence in ontological qualifications has been interpreted in functionalist terms. H. Putnam, "Philosophy and our mental life", in *Mind, Language, and Reality: Philosophical Papers*, vol. II, Cambridge 1975, 291-303, and M.C. Nussbaum, *Aristotle's De Motu Animalium*, Princeton 1978, held that Aristotle's philosophy of mind can be significantly compared with modern functionalist accounts of the mental. Their views are attacked by Burnyeat in a 1983 paper published only in 1992: "Is an Aristotelian philosophy of mind still credible?", in *Essays on Aristotle's De anima*, 15-26. Burnyeat maintains that the Nussbaum/Putnam thesis is false, and that Aristotle's philosophy of mind is no longer credible because his conception of the physical is alien to us. Cf. also A. Code and J. Moravcsik, "Explaining various forms of living", in *Essays on Aristotle's De anima*, 129-145. In the same volume, Nussbaum and Putnam defend their interpretation against Burnyeat; cf. "Changing Aristotle's mind", in *Essays on Aristotle's De anima*, 27-56. That Aristotle's cognitive psychology is tenable, even in the context of a modern theory of matter, is argued, in the same volume, by S.M. Cohen, "Hylomorphism and functionalism", cit. and J. Whiting, "Living bodies", 75-91. For the relation of Aristotle's views to modern functionalism, see also D.K.W. Modrak, *Aristotle. The Power of Perception*, pp. 2, 45-47; and T.H. Irwin, "Aristotle's philosophy of mind", in *Companions to Ancient Thought*, vol. II: *Psychology*, ed. St. Everson, Cambridge 1991, 56-83. M.V. Wedin, *Mind and Imagination in Aristotle*, New Haven-London 1988, defends the thesis that Aristotle's account of the mind can be viewed as an early exercise in functionalist, or more exactly, cognitivist explanation. The functionalist interpretation is rejected by R. Heinaman, "Aristotle and the mind-body problem", in *Phronesis* 35(1990), 83-102, who proposes a dualistic reading of Aristotle's psychology. According to functionalism, Heinaman argues on pp. 100-102, a mental event is to be defined in terms of its causal role, whereas the same event can have different physical realizations. But Aristotle considers specific types of perception to be tied down to specific types of bodily change. D.J. O' Meara, "Remarks on dualism and the definition of soul in Aristotle's *De anima*", in *Museum Helveticum* 44(1987), 168-174, explains Aristotle's dualistic tendency as a

The physiological account of perception indicates that he does not suppose perceptual states to include something like (primitive) mental awareness<sup>34</sup>. Perception, however, must surely entail some kind of awareness leading to discriminative behaviour, i.e. an ability to respond in appropriate ways to external stimuli which is a causal precondition for knowledge. Indeed, Aristotle might be credited with Sellar's claim that sense is a cognitive faculty only insofar as it makes knowledge possible—an essential prerequisite of knowledge which by itself knows nothing<sup>35</sup>.

In sense perception there is a physical and physiological chain from object to sense organ<sup>36</sup>. Indeed, the external object does not affect the sense organs directly. It affects only the medium<sup>37</sup>, which is moved by sensible qualities like colour, smell and sound. In turn, each of the sense organs is affected by the medium<sup>38</sup>. But how can Aristotle support the claim—challenged by Plato and Democritus, evidently with different motivations—that we perceive the real objects, and not mere 'appearances' engendered by the medium in sense organs? By assigning a central role to the kinetic aspects of his perceptual theory, Aristotle cannot avoid characterizing the objects of perception as features of the world detectable by sense organs. Thus, what sense organs respond to are not the things 'in themselves', but effects of the sensible forms in the medium, which

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consequence of the incompatibility between his metaphysical and physical approaches to psychology. Also Ch. Shields, "Soul and body in Aristotle", in *Oxford Studies in Ancient Philosophy* 6(1988), 103-137 interprets Aristotle's philosophy of mind as (supervenient) dualism. In contrast, Ph. Webb, "Bodily structures and psychic faculties in Aristotle", in *Hermes* 110(1982), 25-50, is convinced that Aristotle holds an identity theory of mind. For a critical discussion of the recent interpretations of Aristotle's noetics, see also D.K.W. Modrak, "The *nous*-body problem in Aristotle", in *Review of Metaphysics* 44(1990-91), 755-774.

<sup>34</sup> Cf. M.V. Wedin, *Mind and Imagination in Aristotle*, 35-39; and *De sensu*, 460b1-3. In effect, I disagree with Burnyeat, "Is an Aristotelian philosophy of mind still credible?", 21f, who claims that Aristotelian perception entails awareness from the beginning.

<sup>35</sup> See *De anima*, 417b22-24: perception is of particulars, whereas knowledge is of universals. Cf. W. Sellars, *Science, Perception and Reality*, London-New York 1963, p. 46.

<sup>36</sup> For discussion, see also M.C. Nussbaum and H. Putnam, "Changing Aristotle's mind", 37-46.

<sup>37</sup> *De anima*, 419a11f; in this sense Aristotle's and Democritus' positions are similar.

<sup>38</sup> *De anima*, 419a22f; cf. 424b3.



repeat themselves with the same shape in the organ<sup>39</sup>. Evidently, Aristotle is convinced that sense organs are reliable detectors of what they are designed to recognize, even without any 'direct contact'<sup>40</sup>. The senses are mostly unerring about the presence of their "special" objects, because—being passive and highly selective—they are naturally adapted to detect their proper objects. Nature has constructed sense organs in such a way that they take in the appropriate forms when acted upon by sensible qualities of objects in the environment. Glidden refers to these aspects of the Aristotelian theory when he suggests that perception in Aristotle is a completely anatomic or automatic process—although he admits that the distinction between cognitive representation and mechanical transmission is perhaps too modern for the Stagirite<sup>41</sup>. However, we should notice that Aristotle endows the senses—which cannot be identified with their organs *tout court*—with the capability of grasping complex states of affairs<sup>42</sup>. Therefore, he does not restrict perception to a purely mechanical reception of sensible qualities only<sup>43</sup>.

Crucial to Aristotle's perceptual theory is the view that the senses apprehend form without matter:

In general, with regard to all sense-perception, we must take it that the sense is that which can receive perceptible forms without their matter, as wax receives the imprint of the ring without the iron or gold, and it takes the imprint which is of gold or bronze, but not

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<sup>39</sup> Cf. D. Glidden, "Aristotelian perception and the Hellenistic problem of representation", in *Ancient Philosophy* 4(1984), 119-131, on pp. 122f for a discussion of the possible relation of Aristotle's cognitive psychology with modern theories about realism.

<sup>40</sup> Aristotle evidently presupposes a certain similarity relationship between the consecutive changes. Notice that one of the main charges against the species doctrine, which is grounded on this view of perception, is that senses and intellect do not capture their objects directly; see, for instance, the opposition against intelligible species, discussed in ch. III and IV.

<sup>41</sup> Cf. D. Glidden, "Aristotelian perception", 122 and 128.

<sup>42</sup> Cf. for this aspect A. Barker, "Aristotle on perception and ratios", in *Phronesis* 26(1981), 248-266.

<sup>43</sup> On this ambivalence of Aristotelian sensation-perception, see D.W. Modrak, "An Aristotelian theory of consciousness?", in *Ancient Philosophy* 1(1981), 160-170, on p. 163; idem, *Aristotle. The Power of Perception*, 99f and D.W. Hamlyn, *Aristotle's De Anima*, 99-100. W. Bernard, *Rezeptivität und Spontaneität der Wahrnehmung bei Aristoteles*, Baden-Baden 1988, tries to eliminate this ambivalence, defining perception in Aristotle as an act of immediate apprehension and discrimination of perceptible qualities, thus, discovering an active aspect in Aristotelian sensation. However, this discrimination (*krinein*), according to Bernard, cannot be regarded as an act of consciousness.

*qua* gold or bronze. Similarly too in each case the sense is affected by that which has colour or flavour or sound, but by these not in so far as they are what each of them is spoken of as being, but in so far as they are things of a certain kind and in accordance with their principle [*kata logon*]. The primary sense-organ is that in which such a potentiality resides. These are then the same, although what it is for them to be such is not the same. For that which perceives must be a particular extended magnitude, while what it is to be able to perceive and the sense are surely not magnitudes, but rather a certain principle and potentiality of that thing.<sup>44</sup>

The fact that we perceive the sensible object *kata logon* means that a sense can be affected only with respect to the relevant aspects of a thing. This yields a noteworthy extension of the principle 'like by like', already invoked by many of Aristotle's predecessors<sup>45</sup>, and by the same token provides a basis for arguing that there is a causal link between perception and intellectual knowledge. Notice that if actual perception is just the apprehension of the perceptible form as released from matter, this does not entail that perception is identical with some sort of internal object. What affects the senses in actual perception is the ratio (*logos*) of the sensible quality<sup>46</sup>. The perceptual object, as ratio, is something discerned and thus actualized, rather than a mere construction of the human soul. This *kata logon* passage also explains why, in the *Posterior Analytics*, Aristotle observes that the particular is apprehended in perception, and yet that the latter involves the universal<sup>47</sup>. Therefore, perception can provide a basis for intellectual knowledge of essences: in standard cases of perception one receives the form from a particular being *qua* universal.

The senses, which perceive forms without matter, cannot grasp universals as such or manipulate concepts<sup>48</sup>.

<sup>44</sup> *De anima*, 424a17f (transl. Hamlyn).

<sup>45</sup> For the origin of this principle, see A. Finkelberg, "'Like by like' and two reflections of reality in Parmenides", cit. See also Ch. Witte, "Dialectic, motion, and perception: *De anima* book I", in *Essays on Aristotle's De anima*, 169-183, on pp. 181-2.

<sup>46</sup> Cf. J.K. Ward, "Perception and logos in *De anima* II.12", in *Ancient Philosophy* 8(1987), 217-233, on p. 219f. One has to recall, however, that the receiving matter (of the percipient) does not remain impassible.

<sup>47</sup> *Posterior Analytics*, II.19, 100b1-2.

<sup>48</sup> See, e.g., *Posterior Analytics*, I.31 and II.19. *De anima*, however, is not primarily concerned with concept acquisition, and examines various activities and functions of the individual soul.

Now, if thinking is akin to perceiving, it would be either being affected in some way by the object of thought or something else of this kind. It must then be unaffected, but capable of receiving the form and potentially such as it, although not identical with it; and as that which is capable of perceiving is to the objects of perception, so must be the intellect similarly to its objects.<sup>49</sup>

Aristotle's aim in this crucial chapter of the *De anima* is to analyze the differences between thinking and sensation, rather than to assimilate—as was often argued—the former to the latter<sup>50</sup>. In perception, attention is directed toward the individual features of the object, while in thought generic ones are examined. There is no bodily organ used by the intellect, and yet no thought without sensible images (*phantasmata*) is possible<sup>51</sup>. *Phantasmata*, the causal result of perceptual states, may be viewed as devices or structures representing objects to the percipient soul, and thus enable the latter to go beyond a mere recording of or reacting to a causally impinging item<sup>52</sup>. When Aristotle observes that the human mind does not have a bodily organ, he is not suggesting any direct intuition of forms. Unlike perception, thinking does not depend directly on physiological structures.

Let us now consider some more detailed aspects of the relation between thought and sensitive capabilities in *De anima*. Aristotle

<sup>49</sup> *De anima*, 429a13-17.

<sup>50</sup> *De anima*, 428a18-b9. The distinction between perception and intellective cognition may be compared to Sellars' distinction between a pre-linguistic awareness as discriminative behaviour and an awareness in the logical space of reasons; cf. Sellars, *Science, Perception and Reality*, cit., 160-169.

<sup>51</sup> See *De anima*, 432a3. It is not possible to analyze here the mediating role of the "phantasia" between sense perception and intellectual thought. For its function in Aristotle's psychology, cf. D. Frede, "The cognitive role of *phantasia*", in *Essays on Aristotle's De anima*, 279-295; D.W. Modrak, "Phantasia reconsidered", in *Archiv für Geschichte der Philosophie* 68 (1986), 47-69; idem, *Aristotle. The Power of Perception*, pp. 7-8, 84; J.-L. Labarrière, "Imagination humaine et imagination animale chez Aristote", in *Phronesis* 29(1984), 17-49; G. Watson, "Phantasia in Aristotle, *De anima* 3.3", in *Classical Quarterly* 32(1982), 100-113; M. Schofield, "Aristotle on the imagination", in *Aristotle on Mind and the Senses*, eds. G.E.R. Lloyd & G.E.L. Owen, Cambridge 1978, 99-140; D. Glidden, "Aristotelian perception", 125-26; S. Bernadete, "Aristotle, *De anima*, III.3-5", in *Review of Metaphysics* 28(1974-75), 611-622. A rather unorthodox, but nonetheless convincing view was recently advanced by Wedin, *Mind and Imagination in Aristotle*: imagination in Aristotle is not a standard faculty, and subserves the operation of the full-fledged faculties, in the sense that images are required for the full-fledged faculties to represent their objects in complete intentional acts.

<sup>52</sup> See for extensive discussion Wedin, *Mind and Imagination in Aristotle*, ch. II and IV.

regards the soul as a complex of related faculties or capacities for grasping objects. A psychological faculty is not singled out, as in Plato, by its correlation to an ontologically characterized class of objects. Aristotle works out the differences between objects of perception and cognition on the basis of epistemic properties. In fact, faculties are to be identified in terms of their function and, ultimately, in terms of their objects<sup>53</sup>. The mind enables us to discriminate between a thing and its essence<sup>54</sup>. Since the noetic object depends on sensible representations, higher-order faculties, as a consequence, presuppose the use of lower ones<sup>55</sup>.

There are two fundamental modes of thinking. One of them captures the intelligible form or the defining features of sensible things from sensory images. Aristotle regards this mode of thinking as a simple or direct apprehension of undivided objects (*asuntheta*)<sup>56</sup>. The other one is discursive thinking, a conceptual combination of single thoughts or notions<sup>57</sup>. For present purposes, we are more interested in the first mode (simple apprehension). It is this intellectual act which medieval philosophers describe as the cognitive grasp of the intelligible form, grounded in the abstraction of the *species intelligibilis*.

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<sup>53</sup> *De anima*, 415a16-22.

<sup>54</sup> *De anima*, 429b10-13; see also J. van der Meulen, "Die aristotelische Lehre vom *noûs* in ihrer ontologischen Verwurzelung", in *Zeitschrift für philosophische Forschung* 14(1960), 526-535, on p. 530.

<sup>55</sup> *De anima*, 430a1-10 and 432a5. Cf. also 431a17, b2 where Aristotle emphasizes the dependence on phantasms of the practical intellect. Subsequently, most Neoplatonic interpretations limit the sense dependence of intellectual cognition to the practical intellect only; cf., for instance, the views of Simplicius and Marcantonio Genua, examined in ch. VIII, § 1.

<sup>56</sup> *De anima*, 430a26-b5.

<sup>57</sup> These discursive operations can be subdivided into judgment and syllogistic reasoning. I only partially agree, however, with M.F. Lowe, "Aristotle on kinds of thinking", in *Phronesis* 28(1983), 17-30, who connects the allusion in *De anima*, III.4, 429b5-9, regarding the degrees of the mind's potentiality, with Aristotle's reflection on the distinction between thought of undivided objects and discursive thinking in III.6. The distinction between apprehensive and autonomous thinking, drawn by Lowe, is adequately criticized by Wedin, *Mind and Imagination in Aristotle*, 260-262. Wedin does not question, I think rightly, the existence of thoughts regarding the *essence* of objects to which propositional truth and falsity are inapplicable; cf. pp. 125-26. For an extensive discussion on the relation between the two modes of thinking, see V. Kal, *On Intuition and Discursive Reasoning in Aristotle*, cit. Kal defines apprehension as intuition, viz. as a function of the *knowing* mind; discursivity is a property of the *thinking* mind; cf. in particular, pp. 9-15, and Part III of his work.

The simple apprehension of the intellect is described by Aristotle as the thinking of undivided objects<sup>58</sup>, namely forms or essences<sup>59</sup>. One cannot grasp the universal nature of sensible things without representational devices: sensible images are needed as vehicles of thought<sup>60</sup>. It may therefore be misleading to describe Aristotle's object-oriented epistemology—developed along the lines of an integrated model of perceptual and noetic activity<sup>61</sup>—on the basis of the notions of abstraction<sup>62</sup> and intuition<sup>63</sup>. In simple apprehension,

<sup>58</sup> *De anima*, 430a26. In Scholastic philosophy, this type of cognition is regarded as the intellect's first operation. Cf. already Anonymus Magister artium, *Lectura in librum de Anima*, a quodam discipulo reportata, ed. R.A. Gauthier, Grottaferrata 1985, on p. 478; this commentary was written between 1240-45. For discussion, see ch. II, § 1.4.

<sup>59</sup> *De anima*, 430b26f; with "essence" Aristotle means "what it is for a thing to be what it was" (*to ti en einai*); see also 431b14-15 on the "infimae species". For an extensive exegesis of this chapter III.6 and its links with *Metaphysics*, Theta, 10, see: K. Oehler, *Die Lehre vom noetischen und dianoetischen Denken bei Platon und Aristoteles*, München 1962, 186-234; E. Berti, "The intellection of 'indivisibles' according to Aristotle", in *Aristotle on Mind and the Senses*, eds. G.E.R. Lloyd & G.E.L. Owen, Cambridge 1978, 141-163; Th. de Koninck, "La noësis et l'indivisible selon Aristote", in *La naissance de la raison en Grèce*, ed. J.-F. Mattéi, Paris 1990, 215-228, offers an interpretation diverging from Berti's. The problem whether this non-discursive thought is propositional is addressed in A.C. Lloyd, "Non-discursive thought—an enigma of Greek philosophy", in *Proceedings of the Aristotelian Society* 70(1969-70), 261-274; but see the reaction of R. Sorabji, "Myths about non-propositional thought", in *Language and Logos in Ancient Greek Philosophy*, eds. M. Schofield & M. Nussbaum, Cambridge 1982, 295-314. A solution to this problem, avoiding the difficulties of the conflicting views of Lloyd and Sorabji, is in Wedin, *Mind and Imagination in Aristotle*, 128-131. Without denying the legitimacy of thoughts whose purchase on truth is through the notion of contact or acquaintance, he argues that thoughts are essentially combinable. Incomposite objects can be thought of only in combination with other objects. Thus, Aristotle is not attributed the problematic view of the contemplation of isolated concepts.

<sup>60</sup> Cf. D.K.W. Modrak, "The *nous*-body problem in Aristotle", on p. 761: Aristotle does not appeal to indivisible intelligibles in order to cut certain intelligibles free from their moorings in sense experience; see also pp. 770-71.

<sup>61</sup> Cf. Modrak, *Aristotle. The Power of Perception*, 130.

<sup>62</sup> In Aristotle this term (*aphaïresis*) is mostly used in logical contexts, indicating a method of subtraction which isolates objects for scientific study; see J.J. Cleary, "On the terminology of 'abstraction' in Aristotle", in *Phronesis* 30 (1985), 13-45, in particular pp. 36-45 where *De anima*, 429b11-23 and III.7-8 are examined. For the abstraction of mathematical objects, Aristotle uses the term *chorizein*. V. Kal, *On Intuition and Discursive Reasoning*, cit., 13f points out that *noesis* is not abstraction. The notion of abstraction of mathematical objects is more specifically developed by Alexander of Aphrodisias in his *De intellectu*, in *De anima liber cum mantissa*, ed. I. Bruns, Berlin 1887, 107, ll. 22-5; see also P. Thillet, "Matérialisme et théorie de l'âme chez Alexandre d'Aphrodise", in *Revue philosophique de la France et de l'Étranger* 106 (1981), 5-24, on p. 19. For the (conceptual) abstraction of the intellect, Alexander uses also *chorizein*; cf. *De anima*, 90 and *De intellectu*, 111, ll. 17-18. The same use of

the mind's grasping of its object in sensible things, the *noeton*<sup>64</sup>, actually depends on symbolic representations or phantasms. From a functionalist perspective, the intellect can be viewed as the form of its objects, that is, as *topos eidon* or *eidos eidon*<sup>65</sup>.

The internal consistency of Aristotle's view may be challenged by observing that, on the one hand, Aristotle repeatedly emphasizes that intelligible forms do not subsist independently of sensible reality, whereas, on the other hand, he assumes that the intellect grasps them. In other words, Aristotle's naturalism seems to jeopardize the possibility of immaterial mental acts. One has to recall, however, that Aristotle does not postulate any transfer of forms from their sensible substrate to the intellect; the objects of thinking are essences existing in mind as universals abstracted from their concrete manifestations. Thus, the identity of the intellect with its objects means that the rational structure of the world is re-enacted

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*chorizein* will be adopted by Simplicius; cf. *In Aristotelis Physicorum libros*, 18. As regards abstraction as activity of the intellect *in habitu* in Alexander, see P. Moraux, *Alexandre d'Aphrodise. Exégète de la noétique d'Aristote*, Liège-Paris 1942, 121f and B. Bazán, "L'authenticité du *De intellectu* attribué à Alexandre d'Aphrodise", in *Revue philosophique de Louvain* 71(1973), 468-487, on p. 480. Thillet, "Matérialisme et théorie de l'âme", 19, argues convincingly that *noesis* in Alexander is to be interpreted as *perilepsis* ('embrace'). For this reason, I disagree with M.M. Tweedale, "Alexander of Aphrodisias' views on universals", in *Phronesis* 29(1984), 279-303, who, on p. 282, identifies thought with abstraction in Alexander. In Plutarchus, *Platonicae Quaestiones*, in *Moralia*, vol. XIII.1, with an English translation by H. Cherniss, Cambridge (Ma.)-London 1976, 1001e, ideas are reached by abstraction (*aphairesis*). According to Ph. Merlan, *Monopsychism, Mysticism, Metaconsciousness: Problems of the Soul in the Neoaristotelian and Neoplatonic Tradition*, The Hague 1969, 288, note 13, the notion of (conceptual) abstraction originates with Albinus, *Epitome*, c. 10. The medieval concept of "abstractio", resuming Boethius' translation of *aphairesis*, is used for the first time by Abelard, John of Salisbury and Hugh of Saint Victor. Its 13th-century developments, however, are chiefly based upon Avicenna's metaphysical views of the nature of cognition.

<sup>63</sup> As, for example, in V. Kal, *On Intuition and Discursive Reasoning in Aristotle*, passim. Rightly J.H. Lesker, "The meaning of *NOUS* in the Posterior Analytics", in *Phronesis* 18 (1973), 44-68, indicates on p. 45 that terms like "intuition" or "intellectual intuition" have too varied a history to be thought of as simple equivalents of *nous* or *noesis*. L. Couloubaritsis, "Y-a-t-il une intuition des principes chez Aristote?", in *Revue internationale de philosophie* 34(1980), 440-471, claims on p. 467 that there is no intuition of principles in Aristotle.

<sup>64</sup> *De anima*, 431b2: "That which can think, therefore, thinks the forms in images, (...); 432a5: "(...) the objects of thought are included among the forms which are objects of perception, (...)." For the role of images in intellectual thought, see also *De memoria*, 450a1-7.

<sup>65</sup> *De anima*, 429a13, 28-29 and 431b20 are all crucial passages for the medieval and Renaissance disputes.

in human thought. And therefore, if one interprets the receptivity of the intellect as the potentiality to perform cognitive acts “concerning” the intelligible core of sensible reality, the apparent contradiction vanishes.

In dealing with the issue of how mind is capable of apprehending essences with the aid of phantasms, Aristotle introduces the notion of an active intellect or productive mind: a *hexis*, a habitus or disposition, providing us with the capability of intellectual thought<sup>66</sup>, is associated with our soul. This agent intellect enables Aristotle to preserve a parallellism between sense perception and intellectual knowledge. However, new problems have to be addressed. For example, Aristotle describes the agent intellect both as an active principle of production (the Scholastic “omnia facere”) and as a light. It is thus unclear whether its function is that of (re)producing the intelligible form at the mental level or else that of *uncovering* the intelligible core of sensible reality<sup>67</sup>. However, it is likely that Aristotle did not consider these as conflicting views.

Another problematic issue is to be mentioned here. According to the Aristotelian integrated model of perception and knowledge, thinking cannot occur without perceptual activity. And yet, the active intellect, viewed as a continuous activity, seems independent of sensory images and ‘transcends’ the other cognitive faculties<sup>68</sup>. However, one cannot fail to notice that in *De anima*, by describing the active mind as *hexis*, Aristotle emphasizes its dispositional

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<sup>66</sup> Notice that Aristotle introduces this distinction only in *De anima*, III.5; in *De anima*, III.4, but also elsewhere in *Metaphysics* XII and in *De generatione animalium* II.3, the discussion on human *nous* concerns *nous* undifferentiated. For obvious reasons, I do not analyze this idea of an agent intellect; for a survey of Ancient and medieval interpretations, see V. Kal, *On Intuition and Discursive Reasoning in Aristotle*, 93-109; P. Huby, “Stages in the development of language about Aristotle’s *nous*”, in *Aristotle and the Later Tradition*, eds. H. Blumenthal and H. Robinson, London 1991, 129-143. For recent interpretations that undermine and correct the transcendent interpretation—still present in, e.g., Kal—see Wedin, *Mind and Imagination*, ch. VI; J.M. Rist, *The Mind of Aristotle. A Study in Philosophical Growth*, Toronto 1989, 179-181.

<sup>67</sup> *De anima*, III.5. Notice, however, that Aristotle does not identify thought with the generation of information from mental operations on images. The verb *poiein* assumes in this context an extended sense. In *De anima*, III.4-5 no evidence whatsoever can be found that thinking requires abstraction.

<sup>68</sup> See *De anima*, III.5 and the famous passage in *De generatione animalium*, II.3, which regards the *nous* entering the human organism from without and, thus, excluded from the study of nature.

character: the active mind is a functional aspect of mental activity as a whole<sup>69</sup>, rather than an autonomous type of thinking—the agent intellect is a wired-in *ability* or permanent *disposition* to perform certain operations.

Aristotle's integrated theory of perception and intellectual thought is the framework of the Scholastic doctrines of the *species in medio* and the *species intelligibiles*<sup>70</sup>. In the interaction between the actualized medium and sense organs, the senses do not receive the form itself or a physical similitude: they merely become identical in form to the external objects. By claiming that only the relevant aspects of sensible objects affect the soul in perception, Aristotle endeavours to justify the veridicality of sensible representations. On the basis of phantasms—which may be called *images* insofar as they are *representational* structures produced by the activity of phantasy—the agent intellect actualizes *noeta*, that is, it generates or reveals the intelligible kernel of sensory information<sup>71</sup>.

A crucial problem for Aristotle's theory, and one which recurs under many guises throughout the history of philosophy, is the relation between the stone as 'external' object and its form as present in the intellect. The spatial metaphor for 'internal' and 'external', which resists a clear interpretation, cannot be accepted as a satisfac-

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<sup>69</sup> D.J. O' Meara, "Remarks on dualism and the definition of soul in Aristotle's *De anima*", cit., p. 173, note 33, observes that the serious and unsolvable difficulties associated to the notion of intellect as efficient cause, might be described in terms of a dilemma resulting from the application of Aristotle's theory of change and its causes to the process of intellection. For discussion, see also D.K.W. Modrak, "The nous-body problem in Aristotle", cit., 765-66; L.A. Kosman, "What does the maker mind make?", in *Essays on Aristotle's De anima*, 343-358; Ch.H. Kahn, "Aristotle on thinking", in *idem*, 359-379. The determination of the agent intellect's exact function in the intellectual act will give rise to the following problems in most medieval and Renaissance authors: 1. what is the relationship of this faculty to the phantasms; 2. whether it is a knowing faculty; 3. whether it has innate, or, in any case, *a priori* knowledge. Some medieval authors will eliminate this faculty altogether; cf. Peter Olivi (ch. III, § 3.4) and Durandus (ch. IV, § 2.1).

<sup>70</sup> The controversy concerns the need for formal mediation in intellectual knowledge. The problem of mediation evidently does not have the same relevance in Plato's thought, for real cognitive objects do not depend on representational structures caused by perceptual objects.

<sup>71</sup> The agent intellect produces objects which are somehow already present in the soul; see also below. Yet, it remains unclear whether Aristotle regarded actualization as in an uncovering or else a generation of the intellect's objects.



tory explanatory model<sup>72</sup>. It is not even appropriate—in connection with many Greek authors in general, and with Aristotle in particular—to speak of an internal world as sharply distinguished from outer reality: the only purpose of Aristotle's 'outer-inner' metaphor, I believe, is that of signifying a cognitive grasp of the intelligible structure of sensible reality.

The spatial metaphor requires the construction of a bridge between inner and outer worlds. Medieval philosophy tries to gap the 'abyss' with an articulate theory of abstraction. Any causal theory adopting the basic coordinates of Aristotle's approach, however, faces the formidable problem of the qualitative difference between material, sensible forms and dematerialized 'inner' forms. Assuming that the intelligible forms are at most potentially or dispositionally innate<sup>73</sup>, one is immediately confronted with the puzzle of how an immaterial active intellect can manipulate sensible phantasms. Scholastic theories of knowledge, inspired by the notion of intention of Arabic commentators, try to solve this difficulty by introducing a distinction, foreign to Aristotle's writings, between *id quod* and *id quo intelligitur*<sup>74</sup>. The *id quo* is ambiguously conceived as a functional psychological principle as well as a 'weak' or 'intentional' entity. And naturally, this ambiguity affects arguments for the objectivity of intellectual thought based on the *id quo*. The best these arguments can achieve, in a broadly Aristotelian framework, is to show that the contents of thought depend on a functionally indispensable, and yet ontologically problematic principle. Alternatives to the species-doctrine, however, do not fare much

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<sup>72</sup> See D.W. Hamlyn, *Aristotle's De Anima*, 99. The general problem is discussed by J.R. Searle, *Intentionality. An Essay in the Philosophy of Mind*, Cambridge 1989 (first edition 1983), ch. 2, in particular pp. 37f.

<sup>73</sup> At least the potential or dispositional innateness seems suggested by Aristotle himself (in *De anima*, 429a22f and 431b26f) with respect to the possible intellect. Moreover, the light-metaphor for the active mind, which actualizes what is there already, implies that the intelligible objects are generated within the mind. Hellenistic commentators, such as Themistius and Simplicius, interpret these passages in terms of innate contents. Their nativist interpretation of Aristotle's psychology will be accepted by some Arabic commentators and will be assimilated by many authors of the first half of the 13th century into an Augustinian framework; see ch. II, § 1, in particular subsections 5 and 8. More neatly Neoplatonic versions of innatism will reappear during the second half of the 13th century with, e.g., James of Viterbo, Henry Bate and Dietrich of Freiberg; cf. ch. III, § 4.5, and § 5.

<sup>74</sup> For this reason, the *aistēta* and *noēta* cannot be identified with sensible, respectively, intelligible species.

better. And indeed, some of the recalcitrant problems addressed by the species doctrine are still tantalizing contemporary philosophers of mind<sup>75</sup>.

#### 1.4. *Representational views of knowledge in Hellenistic philosophy*

More materialistic views in the psychology of perception and cognition reappear with Hellenistic philosophy. Ancient physicalism in the philosophy of mind, however, is not to be identified with a form of reductionism, and Hellenistic psychology cannot be viewed as a naive reformulation of Presocratic approaches<sup>76</sup>. An immaterial soul, a causally inert entity in a material world, is unacceptable to Hellenistic philosophers<sup>77</sup>. The influence of Epicurean and Stoic theories of knowledge on the later species debate is not direct<sup>78</sup>, but the connections with Arabic and Scholastic cognitive psychology are sufficiently significant to justify a brief critical survey of these theories, an important antecedent of which is Democritus' doctrine of the so-called "effluences"<sup>79</sup>.

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<sup>75</sup> There is a broad parallel between the species doctrine and functionalist programs for the study of human cognition, which are often pursued without settling the ontological question regarding the mind. Similarly, the intelligible species is mainly defended because it has a job to do. See also the Introduction.

<sup>76</sup> See for discussion, J. E. Annas, *Hellenistic Philosophy of Mind*, Berkeley 1992, 3-7, and ch. 6.a.

<sup>77</sup> Cf. Epicurus in Diogenes Laertius, *Lives of Eminent Philosophers*, X.64 and 67.

<sup>78</sup> Thomas, occasionally, refers to Stoic psychology; cf. ch. II, § 3.6. During the 16th and 17th century, some Hellenistic authors are cited explicitly in the species controversy. In the course of a discussion on the necessity of the agent intellect for producing intelligible species, the College of Coimbra, *Commentarii in tres libros de anima* (...), Venetiis 1616 (first edition Coimbra 1598), on p. 303b refers to Stoic doctrines (but also to Democritus and Epicurus), quoting Boethius, *De consolazione philosophiae*, V.4 (prose). Epicurus is referred to by C.G. Berigardus, *In III libros De anima*, Padova 1661 (first edition Udine 1643-47), on p. 726. A peculiar Epicurean doctrine of species will be formulated in the 17th century by Pierre Gassendi and Walter Charleton; see also Thomas Hobbes' early position on species in the *Short Tract*. These authors are discussed in ch. XI, § 2-3, of vol. II (forthcoming).

<sup>79</sup> A.A. Long, *Hellenistic Philosophy. Stoics, Epicureans, Sceptics*, London 1986 (first edition 1974), 22; G. Watson, *The Stoic Theory of Knowledge*, Belfast 1966, 32-33, who traces elements of this conception also in *Timaueus*, 45-6, 67-8, and *Theaetetus*, 156f.

1.4.1. Epicurus' *prolepsis*

Epicurus describes knowledge as a completely physiological process. All knowledge derives from sensation, which originates in the *eidola* effluent from external objects and impinging on sense organs<sup>80</sup>. The *eidola* are clusters of atoms—a sort of 'skins' released from the surface of material objects—causing perception and thought. Perception is physically characterized as a change in the atomic motions of the soul. Thought is assimilated to sense perception, at least insofar as its objects *and* causes are concerned<sup>81</sup>. Indeed, the mind itself acts as a kind of sense organ responsive to flimsy atomic structures. Epicurus discerns, however, different stages in the cognitive process. The *eidola* penetrate the 'sense' organs of the mind and are causally responsible of a representation (*phantasia*) of the solid body which emitted the *eidola*. Thus, representations are a direct consequence of the *eidola*, and only an indirect consequence of external objects<sup>82</sup>.

Each sensation arises from a physical contact between the atoms of the percipient soul<sup>83</sup> and the incoming atoms of the *eidola*<sup>84</sup>. Thus, the subject is not passively involved in perception, and the latter is to be understood in terms of the dynamic contact between two sets of atoms belonging to the perceived, respectively, to the percipient<sup>85</sup>. As a consequence of repeated exposure to a given object, a *prolepsis* is formed<sup>86</sup>, which may be described as an infalli-

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<sup>80</sup> Diogenes Laertius, *Lives of Eminent Philosophers*, X.46-49. *Eidola* might be translated as 'images'. Since, however, the term is technical, and "image" has unwanted mental associations, the Greek transliteration is preferable.

<sup>81</sup> Diogenes Laertius, *Lives*, X.49-50; cf. Lucretius, *De rerum natura*, IV.722-31, 749-51.

<sup>82</sup> The direct objects of perception seem therefore to be *eidola*, rather than solid objects; see St. Everson, "Epicurus on the truth of the senses", in *Companions to Ancient Thought*, vol. I: *Epistemology*, ed. St. Everson, Cambridge 1990, 161-183, on pp. 177f. However, Lucretius argues that we perceive things rather than their images, see *De rerum natura*, IV.256-68. For discussion, see also A.A. Long, "Aisthesis, prolepsis and linguistic theory in Epicurus", in *Bulletin of the Institute of Classical Studies* 18(1971), 114-133, on p. 117.

<sup>83</sup> For the atomic structure of our soul, cf. Diogenes Laertius, *Lives*, X.63.

<sup>84</sup> See also Lucretius, *De rerum natura*, II.431f; IV.26-41.

<sup>85</sup> Diogenes Laertius, *Lives*, X.63: "Further, we must keep in mind that soul has the greatest share in causing sensation." For an application of this principle to vision, see Lucretius, *De rerum natura*, IV.230-468, 706-721.

<sup>86</sup> For an extensive analysis, see D.K. Glidden, "Epicurean *prolepsis*", in *Oxford Studies in Ancient Philosophy* 3(1985), 175-217. See also A.A. Long, "Aisthesis, pro-

ble recognition or habit of association. Unfortunately, few texts provide reliable information about this concept, and what doxographical sources say on *prolepsis* is mostly framed from a Stoic perspective<sup>87</sup>. In this respect, Diogenes Laertius' report is rather puzzling:

By preconception [*prolepsis*] they mean a sort of apprehension [*katalepsis*] or a right opinion or notion [*ennoian*], or universal idea [*katholiken noesin*] stored in the mind; that is, a recollection of an external object often presented.<sup>88</sup>

According to the last clause, *prolepsis* offers an epistemic connection between perceivers and observed regularities in nature. Repeated exposure to instances of a given class of things induces the capability of recognising and classifying elements of that class, as well as of designating the class itself<sup>89</sup>.

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lepis and linguistic theory in Epicurus", cit.; A. Manuwald, *Die Prolepsislehre Epikurs*, Bonn 1972 and F. Jürss, "Epikur und das Problem des Begriffen (Prolepse)", *Philologus* 121(1977), 211-225; J.E. Annas, *Hellenistic Philosophy of Mind*, 157f. According to Cicero, *De natura deorum*, I.17, Epicurus introduced for the first time *prolepsis* as a technical term in the sense of "praenotio". Elsewhere, in *De natura deorum*, I.43, Cicero assimilates *prolepsis* to some sort of imprinted concept, that is, an "antecepta informatio" or "innata cognitio"; for discussion, see V. Goldschmidt, "Remarque sur l'origine épicurienne de la «prénotation»", in *Les Stoiciens et leur logique*, Paris 1978, 155-169, and E. Asmis, *Epicurus' Scientific Method*, Ithaca(N.Y.)-London 1984, 67-71.

<sup>87</sup> Cf. Cicero, who assimilates *prolepsis* to concept (*ennoia*) in *Academica*, II.30; see also *Topica*, VII.30: "Notionem appello, quod Graeci tum *énnoian* tum *prólepsis*. Ea [sc. notio] est insita et animo praecepta cuiusque cognitio enodationis indigens"; cf. also above and Boethius, *In Ciceronis Topica*, in *M.T. Ciceronis Opera*, eds. I.C. Orelli and I.G. Baiter, vol. V, Zürich 1833, p. 331. The same assimilation of the *prolepsis* to notion is found in the Greek-Latin edition of ps.-Plutarchus [=Aetius], *De placitis philosophorum*, IV.11, Florentiae 1750, 107. The Stoic appropriation of *prolepsis* appears also from the works of their opponents, such as Plutarchus, *De communibus notitiis adversus Stoicos*, in *Moralia*, vol. XIII.2, with an English translation by H. Cherniss, Cambridge (Ma.)-London 1971, 1059a-1060b. It will be confirmed during the Renaissance by Justus Lipsius; cf. his *Manuductio ad Stoicam philosophiam*, in *Opera*, 4 vols., Wesel 1675, vol. IV, 706f. For a general discussion, see D. Glidden, "Epicurean *prolepsis*" and A. Manuwald, *Die Prolepsislehre Epikurs*, 9.

<sup>88</sup> Diogenes Laertius, *Lives*, X.33, cf. also 31.

<sup>89</sup> Jürss, "Epikur und das Problem des Begriffen (Prolepse)", 217-218, characterizes *prolepsis* as prior to the level of conceptualisation and—just like Manuwald, *Die Prolepsislehre Epikurs*, 112, before him—he claims it is connected to the origin of language. For this reason, *prolepsis* would be the topic of Diogenes Laertius, *Lives*, X.37-38 too; cf. Jürss, *ibidem*, and Manuwald, 105. This interpretation is accepted also by A.A. Long & D.N. Sedley (eds.), *The Hellenistic Philosophers*, vol. I, Cambridge 1987, 89; see already A.A. Long, "Aisthesis, *prolepsis* and linguistic theory in Epicurus", 124. According to this interpretation the *prolepsis*, as *proton*

*Prolepsis* is also needed as an indispensable startingpoint for philosophy. Epicurus claims that unless something is given, our inquiries will always be caught in a vicious regress of proofs<sup>90</sup>; he maintains that the initial assumptions of scientific inquiry are given directly by experience. Notice, however, that Diogenes Laertius tends to give a Stoic interpretation of *prolepsis*, assimilating it to a full-blown mental representation. In fact, according to Glidden, he fails to fathom the difference between the empirical character of recognized general features in nature and the intentional character of representational concepts<sup>91</sup>.

Epicurus maintains that primary presentations, which include also *prolepseis*, are infallible, because they are caused mechanically or "by direct contact"<sup>92</sup>. Sense perception is the non-mental, merely physical event of the reception of stimulations, simply witnessing the reality of things. There is no distinction between an 'inner' object of awareness and outer reality. Therefore, the problem of justifying the inference from descriptions of perceptual states to state-

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*ennoema*, underlies the meanings of words. Cf., finally, J.E. Annas, *Hellenistic Philosophy of Mind*, 166-67.

<sup>90</sup> See Asmis, *Epicurus' Scientific Method*, 64. Starting with Epicurus, it is a common place that scientific research is made possible by "preconceptions"; cf. Sextus Empiricus, *Adversus Mathematicos*, VIII.331a-332a. Long & Sedley, *The Hellenistic Philosophers*, 89 suggest that in this sense Epicurus put forward his preconception as an alternative to Meno's paradox: one cannot inquire about something without knowing already what that something actually is.

<sup>91</sup> See D. Glidden, "Epicurean *prolepsis*", 183-186. In the 17th century, this quasi-Stoic interpretation will determine Gassendi's reception of Epicure's epistemology; cf. D.K. Glidden, "Hellenistic background for Gassendi's theory of ideas", in *Journal of the History of ideas*, 49(1988), 405-424. For discussion, see ch. XI, § 3.2. It might be interesting comparing Epicurus' ideas with Andrew Woodfield's views of the genesis of concepts. Woodfield has suggested that concepts come into being out of what he calls 'protoconcepts', and these are in some way tied to (what he calls) 'recognition-scheme's'; cf. "On the very idea of acquiring a concept", in *Philosophical Perspectives on Developmental Psychology*, ed. J. Russell, Oxford 1987, 17-30, in particular pp. 29-30.

<sup>92</sup> See Diogenes Laertius, *Lives*, X.32 and X.50: "And whatever presentation we derive by direct contact, whether it be with the mind or with the sense organs, be it shape that is presented or other properties, this shape as presented is the shape of the solid thing, and it is due either to a close coherence of the image as a whole or to a mere remnant of its parts." Cf. also Diogenes Laertius, *Lives*, X.33: preconceptions are conceived of as "clear"; and Sextus Empiricus, *Adv. Math.*, VII.203: "so also in the case of the presentations, which are affections of ours, the agent which is the productive of each of them is always entirely presented, and, as being presented, it is incapable of being productive of the presentation without being in very truth such as it appears." Cf. *idem*, VIII.63.

ments about external objects does not even arise: the former are indeed descriptions of a percipient in contact with the physical world<sup>93</sup>. Falsehood and error always depend on intruding opinion, which manipulates and evaluates presentations<sup>94</sup>. In contrast to this, *prolepsis* is an infallible primary presentation resulting from “direct contact”.

In human thinking, both preconceptions (*prolepseis*) and notions (*ennoia*) derive from sensations<sup>95</sup>. It is likely that Epicurus regarded acts of cognition as primarily natural episodes, independent of whether they are clustering processes of disparate observations (*prolepsis*) or designatory (*ennoia*). Doxographical sources, however, regard them as particular types of primary and secondary concepts—preconceptions being directly derived from sensations<sup>96</sup>. A preconception is described by Sextus as a kind of apprehension<sup>97</sup>, while a notion is a “bare movement of the mind”<sup>98</sup>. Preconceptions that persist after removing the source of a particular sensation, constitute a record of our experience of the world, and thus lay the foundations for our judgements.

<sup>93</sup> Indeed, as Lucretius argues in *De natura rerum*, IV.256-68, we perceive the things themselves rather than their images. See also Asmis, *Epicurus' Scientific Method*, 28f and Long & Sedley, *The Hellenistic Philosophers*, 78. For a more extensive discussion, see C.C.W. Taylor, “‘All perceptions are true’”, in *Doubt and Dogmatism. Studies in Hellenistic Epistemology*, eds. M. Schofield, M. Burnyeat and J. Barnes, Oxford 1980, 105-124.

<sup>94</sup> Diogenes Laertius, *Lives*, X.50; cf. Sextus Empiricus, *Adv. Math.*, VII. 210. Opinions may concern non-existing things; Sextus Empiricus, *o.c.*, VIII.337. The problem of how to select sensations proving accurate reports about objects, is addressed by Epicurus with a sharp distinction between sense impressions and judgement. See Diogenes Laertius, *Lives*, X.62; Sextus, *Adv. Math.*, VII.203-216; Plutarchus, *Adv. Colotem*, 1109a f. For discussion: A.A. Long, *Hellenistic Philosophy*, 22f, and also G. Striker, “Epicurus on the truth of sense impressions”, in *Archiv für Geschichte der Philosophie* 59(1977), 125-142. For a similar problem in previous philosophers cf. Empedocles, in *Die Vorsokratiker*, ed. cit., vol. II, Fragm. 127-8, 133-4, 138 (all: DK 31 A 86); Fragm. 125 (= DK 31 B 89).

<sup>95</sup> Sextus Empiricus, *Adv. Math.*, VIII.331a f; see also Lucretius, *De rerum natura*, IV.794-806. O. Gigon, “Zur Psychologie Epikurs”, in *Aspects de la philosophie hellénistique*, eds. H. Flashar & O. Gigon, Vandoeuvres-Genève 1986, 67-98, compares, on p. 93, Epicurus' distinction between *aisthesis* and *prolepsis* with the Aristotelian distinction between *aisthesis* and *empeiria*.

<sup>96</sup> For the differences between the Epicurean and the Stoic notion (*ennoia*), see Glidden, “Epicurean *prolepsis*”, 178f.

<sup>97</sup> *Adv. Math.*, VIII.334a.

<sup>98</sup> *Adv. Math.*, VIII.336a. The *ennoia* gathers a number of impressions into an overall view; cf. Asmis, *Epicurus' Scientific Method*, 63.

In its Stoic and post-Epicurean interpretation, *prolepsis* adumbrates the medieval species—at least insofar as the latter, partially caused by external objects, represents them at a higher and already *cognitive* level. Species were often thought of as a construction of the human soul. And, in a certain sense, preconceptions are constructions, too. They are not a mere effect of the *eidola*, because there are no ‘generic’ images existing objectively; furthermore, preconceptions are produced by the atomic interaction between soul and the external world<sup>99</sup>. A crucial difference is to be emphasized as well: Epicurean materialism does not separate between theory of knowledge and physics, and grounds knowledge solely in the mechanism of perception<sup>100</sup>; however, the conceptual link between physics and psychology also dominates many approaches to cognitive species.

#### 1.4.2. The Stoics on cognitive impressions

The Stoics build up their theories on the basis of Aristotle’s psychology, kinetically interpreting his perception theory, and manifesting a more keen interest for the intentional character and context of representational devices. Aristotle’s account of phantasy seems to provide the Stoics with a viable alternative to Epicurean perception in the framework of their theory of “apprehensive presentation” or cognitive impression, focal point of their epistemology<sup>101</sup>. Stoic theories are metaphysically more parsimonious than Aristotle’s, and their basic model of the mind induces them to focus

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<sup>99</sup> As Long, *Hellenistic Philosophy*, 56, rightly emphasizes.

<sup>100</sup> For a critical analysis of problematic features in Epicurus’ psychology of cognition, see J. Annas, “Epicurus’ philosophy of mind”, in *Companions to Ancient Thought*, vol. II: *Psychology*, ed. St. Everson, Cambridge 1991, 84–101, in particular 97–101. According to Annas, Epicurus does not solve the problem of cognitive content in his meagre ontology of atoms and the void. If getting a sense image into a person fails to explain how the person perceives, equally getting a thought-image into the person fails to explain how the person thinks. See also J.E. Annas, *Hellenistic Philosophy of Mind*, 124f. For a more sympathetic view: C.C.M. Taylor, “‘All impressions are true’”, cit.

<sup>101</sup> Cf. K. Hülser, *Die Fragmente zur Dialektik der Stoiker*. Neue Sammlung der Texte mit deutschen Übersetzung und Kommentaren, Band I, Stuttgart 1987, 286 (=Sextus Empiricus, *Adv. Math.*, VIII.183–185). For discussion, see A.A. Long, *Hellenistic Philosophy*, 123f.

on the content of experience rather than on its phenomenal qualities<sup>102</sup>.

Stoic physics is crucial for a proper understanding of their views on perception and intellectual knowledge. Particularly important is the idea of self-preservation<sup>103</sup>: the survival and welfare of animals and human beings depend essentially on the adequacy of their cognitions<sup>104</sup>. Perception arises from tensions of various sorts in the *pneuma*-continuum, with which the human soul—the most rarified of all bodies—interacts<sup>105</sup>. In sensitive perception, a current of *pneuma* flows from the leading part of the soul (*hegemonikon*<sup>106</sup>) to the sense organ, and then leaves the body; after undergoing a modification, it eventually returns to the body and deposits a sensory image, or *phantasia*, in the mind. Accordingly, the Stoics acknowledge two sources of movement in perception, namely, the percipient soul and the perceived object<sup>107</sup>. The process of sensation is depicted as some sort of tactile interaction. The *pneuma* is the material channel for sensory information travelling to the human soul. On this view, perception is not a passive affection of the soul: in perception, information is actively received, interpreted and assented to<sup>108</sup>. Since, however, sensorial inputs play a special role in this account of perception, the Stoics seem to give more prominence to the inward bound motion.

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<sup>102</sup> For discussion of the relation between Aristotelian and Stoic philosophy of mind, see J.E. Annas, *Hellenistic Philosophy of Mind*, 8-9, 63, and 206-208.

<sup>103</sup> On the context of the contemporary medical, scientific and technological discoveries, cf. Annas, *Hellenistic Philosophy of Mind*, Part One.

<sup>104</sup> See G. Watson, *The Stoic Theory of Knowledge*, Belfast 1966, ch. I, and M. Frede, "Stoics and Skeptics on clear and distinct impressions", in *The Skeptical Tradition*, ed. M. Burnyeat, Berkeley 1983, 65-93, on pp. 66-7.

<sup>105</sup> Cf. G. Watson, *The Stoic Theory of Knowledge*, ch. I-II for a detailed discussion.

<sup>106</sup> The soul is located in the workings of a centralized system accounting for the body's functionings.

<sup>107</sup> Diogenes Laertius, *Lives*, VII.157-158. As a matter of fact, they resume Plato's doctrine exposed in *Theaetetus*; see above. For Diogenes as a source of Stoic philosophy, see J. Mansfeld, "Diogenes Laertius on Stoic philosophy", in *Elenchos* 7(1986), 295-382.

<sup>108</sup> Perception is the reception of and the commitment to information about what is perceived. Therefore, perceiving and thinking are not separate faculties, for a full-blown sense perception includes judgment; see A. Virieux-Reymond, *Pour connaître la pensée des Stoiciens*, Bordas 1976, 38. Nowadays, it is generally accepted that perception depends on active, physiologically based, processes.



External objects act upon sense organs and cause an impression to occur in the mind. This impression, called *phantasia* or “presentation”, is compared by Zeno and Cleanthes to the imprint made by the seal upon the wax<sup>109</sup>. Chrysippus objects to this simile, for he thinks that presentations are much more complex than suggested by the term ‘imprint’. He corrects a strictly literal interpretation by suggesting that a *phantasia* is an alteration or modification rather than a mere impression. In this way, he allows for the soul to be simultaneously affected by various factors, just as air can be<sup>110</sup>. The overall strategy of Chrysippus is that of analyzing perception in terms of the reception of content and its elaboration in linguistic form. Notice in this connection that Chrysippus’ move of characterizing impressions as *alterations* or *modifications* enables him to side-step the issue of their ontological status<sup>111</sup>.

Confronted with the problem of the (un)reliability of sense perception, the Stoics put forward a number of criteria for knowledge. The most important of these criteria is the *phantasia kataleptike*—that is, “cognitive impression” or “apprehensive presentation”<sup>112</sup>—a form of mental representation conceived of as subjectively indubitable and objectively unerring. Diogenes Laertius reports the following characterization: an impression that comes from what is,

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<sup>109</sup> Diogenes Laertius, *Lives*, VII.45. Cf. Sextus Empiricus, *Adv. Math.*, VII.227; Sextus tends also to interpret Aristotelian epistemology in a physiological key, see VII.219-221. With the Stoics, the metaphor of the impression on a waxtablet, interpreted as fact, becomes the basis of a philosophical psychology. In Aristotle, the metaphor of the waxseal was meant to highlight also the immaterial aspects of sense perception, because the wax takes on the form of the seal without its matter.

<sup>110</sup> Diogenes Laertius, *Lives*, VII.50; Sextus Empiricus, *Adv. Math.*, VII.227-30, VIII.400; for discussion: J.M. Rist, *Stoic Philosophy*, Cambridge 1969, 147. See also L. Couloubaritsis, “La psychologie chez Chrysippe”, in *Aspects de la philosophie hellénistique*, eds. H. Flashar & O. Gigon, Vandoeuvres-Genève 1986, 99-146, on p. 130f.

<sup>111</sup> There is a clear analogy with the uncertain ontological status of the medieval species.

<sup>112</sup> Cf. Diogenes Laertius, *Lives*, VII.47; Sextus Empiricus, *Adv. Math.*, VII.257-258, 402 and 426: “For when we inquire what the apprehensive presentation is, they define it as «That which is imprinted and impressed by a real object and according to that object itself, of such a kind as would not be produced by a non-real object.»” See also Cicero, *Academica*, I.41; II.18 and 144. For discussion, see E.P. Arthur, “The Stoic analysis of the mind’s reactions to presentations”, in *Hermes* 111(1983), 69-78.

is imprinted in exact accordance with what is, and is such that an impression of this kind could not come about from what is not<sup>113</sup>.

A somewhat more ample description is given by Chrysippus:

An impression is an affection occurring in the soul, which reveals itself and its cause. Thus, when through sight we observe something white, the affection is what is engendered in the soul through vision; and it is this affection which enables us to say that there is a white object that activates us.<sup>114</sup>

This description of the cognitive impression as an instrumental principle is perhaps the most evident anticipation of the intentional species found in Hellenistic philosophy<sup>115</sup>. However, this family resemblance does not reveal, at closer scrutiny, a truly brotherly relationship. Indeed, the species is primarily supposed to divulge its cause, and may itself become accessible only by the mediation of introspective thinking, whereas the cognitive impression is supposed to reveal itself *simpliciter*<sup>116</sup>. Yet, a sensible comparison can be drawn between the *cognitive* functions of the intelligible species and the Stoic impression. Cognitive impressions do not play their criterial role through our awareness of them; this role is fulfilled through the causal effects they have on our minds *qua* criteria for knowledge<sup>117</sup>. Analogously, the intelligible species count principally for their causal role in transmitting cognitive contents to the intellect.

According to Sextus Empiricus, unflinching critic of Stoic epistemology, the criteria of unerring cognitive impressions involve the fallacy of circular reasoning<sup>118</sup>. However, rather than addressing the

<sup>113</sup> Diogenes Laertius, *Lives*, VII.50; Sextus Empiricus, *Adv. Math.*, VII.248; Cicero, *Academica*, II.77.

<sup>114</sup> In *Hellenistic Philosophers*, eds. Long & Shields, 39B (=Aetius, *Placita*, IV.12.1).

<sup>115</sup> Inter alia, already J. Rohmer, "L'intentionnalité des sensations de Platon à Ockham", in *Revue des Sciences Religieuses* 25(1951), 5-39, emphasizes on pp. 21-28, the influence of Stoic philosophy on Augustine's account of sense perception and on the doctrine of intentionality in Scholastic philosophy.

<sup>116</sup> See ch. II, § 3 for Thomas Aquinas' species theory.

<sup>117</sup> See, for discussion, M. Frede, "Stoics and Skeptics on clear and distinct impressions", 83-85. The differentiating mark of the cognitive impression is a causal feature rather than a possible phenomenological character to be detected by introspection. For a general discussion of the causal properties of intentions, see Searle, *Intentionality*, cit.

<sup>118</sup> Sextus Empiricus, *Adv. Math.*, VII.426: "Then again, since everything that is definitely explained is explained by things known, when we inquire further what the

issue of the internal consistency and explanatory limitations of Stoic theories of perception and knowledge, what is to be emphasized here is that Stoic philosophers regard knowledge as a dynamic process involving sensible reality and an *active* percipient subject. Impression by itself does not account for the recipient's awareness. To have an impression may be regarded as being in a certain perceptual state, and this does not entail a commitment of the percipient to the content of perception. In turn, being in such a perceptual state entails that our soul has been affected; this affection *enables* us to perceive the objects, and to produce propositional judgments<sup>119</sup>. Knowledge is the final outcome of a process starting with the subject's reaction to the way the world appears. A response to impressions is thus postulated: representations are states of the reasoning faculty—which is capable of reflecting on itself, that is, of scrutinizing and interpreting its own representations.

According to the Stoics, the human soul is a 'tabula rasa'; yet, formal mediation in knowledge is not ruled out. Within the broader framework of basic conceptualization, naturally acquired, generic impressions are called *prolepseis*:

And Chrysippus, at variance with himself, says in the first of his book *On reason* that sense-perception and preconception are the criteria; preconception is a natural conception of universals.<sup>120</sup>

This Epicurean term is, in effect, used to distinguish the natural grasp of a universal object from culturally determined concepts. Other sources confirm that a preconception is the initial conception of a thing, arrived at without special mental attention, and derived directly, namely, by simple and unconscious mental operations from the data provided by the senses<sup>121</sup>. Manifested and activated

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«real object» is, they turn round and say that «A real object is that which excites an apprehensive presentation». I do not treat the widely discussed problem of Stoic criteria for true and certain knowledge; for discussion, see Watson, *The Stoic Theory of Knowledge*, 30f; Long, *Hellenistic Philosophy*, 126f; A.M. Ioppolo, *Opinione e scienza. Il dibattito tra Stoici e Accademici nel III e nel II secolo a. c.*, Napoli 1986; G. Striker, "The problem of the criterion", in *Companions to Ancient Thought*, vol. I, cit., 143-160.

<sup>119</sup> Cf. *Hellenistic Philosophers*, 39B (=Aetius, *Placita*, IV.12, 1-5). Transposed at the intellectual level, this could be compared with the Scholastic "simplex apprehensio", based upon the Aristotelian idea of a cognitive grasp of undivided objects.

<sup>120</sup> Diogenes Laertius, *Lives*, VII.54. See also Epicurus in *idem*, X.31.

<sup>121</sup> *Hellenistic Philosophers*, 39E (=Aetius, *Placita*, IV.11.3): "Some conceptions arise naturally in the aforesaid ways and undesignedly, others through our own in-

by relatively elementary mental processes on the materials presented by the senses, preconceptions are the first recognizable expression of the activity of the *hegemonikon* or “ruling part”.

This Stoic variation on Epicurean *prolepsis* is remarkably close to the intelligible species, at least insofar as the latter is abstracted by an (unknowing) agent intellect and provides a basis for the first operation of the intellect, which is also called “simplex apprehension”. Preconceptions are an intermediate ‘level’ between merely passive affections of the soul and rational impressions<sup>122</sup>. However, no cognition is arrived at independently of sense perception, which provides the raw material for knowledge: by manipulating and articulating this material, human beings regiment reality<sup>123</sup>. The material character of cognition does not imply that the soul is only passively involved in the process of knowledge; quite to the contrary, the acts of selecting, ordering and assenting are based on the material character of the *hegemonikon* itself.

#### 1.4.3. Sextus Empiricus’ criticisms

The Stoic view of perception and thought as an intentional interaction between soul and the external world foreshadows medieval discussions of the mediating principles in human cognition<sup>124</sup>.

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struction and attention. The latter are called ‘conceptions’ only, the former are called ‘preconceptions’ as well.” For discussion, see F.H. Sandbach, “ENNOIA and PROLEPSIS in the Stoic theory of knowledge”, in *Classical Quarterly* 24(1930), 44-51; Goldschmidt, “Remarque sur l’origine épicurienne de la «prénotion»”, cit.; Long & Sedley, *Hellenistic Philosophers*, 241. For the differences between Epicurean and Stoic characterizations of preconception (*prolepsis*) and of notion (*ennoia*), cf. Glidden, “Epicurean *prolepsis*”, 178f; cf. also *supra*.

<sup>122</sup> For the discussion of this causal process, see Frede, “Stoics and Skeptics on clear and distinct impressions”, 69-70.

<sup>123</sup> Cf. Diogenes Laertius, *Lives*, VII.51; see also Sextus, *Adv. Math.*, III.40 and VIII.409. For discussion, cf. Watson, *Stoic theory of knowledge*, 23-27.

<sup>124</sup> Stoic influences on medieval theories of intentionality were already noticed by R.A. Gauthier, “Préface” in Thomas de Aquino, *Sentencia libri de anima*, in *Opera omnia*, ed. Leonina, vol. XLV.1, Roma-Paris 1984, chap. IV, 225\*: “On peut en dire autant d’une autre doctrine typiquement averroïste qui tient une certaine place dans le commentaire de Saint Thomas sur le *De anima* sans que jamais Averroès ne soit nommé à son propos: c’est la doctrine de l’«esse spirituale» (...) ou de l’«esse intentionale» (...). Sans doute cette doctrine a-t-elle son origine dans l’affirmation répétée d’Aristote que le sens reçoit les «espèces» sensibles sans la matière mais l’exégèse d’Averroès précise et étend cette assertion. Elle le fait d’abord en recourant à une notion qui avait tenu une grande place dans la psychologie stoïcienne, puis dans la médecine grecque et arabe: celle de *pneuma*, «spiritus». Sortes d’influx nerveux, les

Roughly speaking, Stoics and Scholastics seem to share the view that the mind can respond to physical stimulations by producing representations of their content, although the content itself does not produce a physical effect<sup>125</sup>. It is perhaps even more surprising to discover that the bulk of medieval criticisms of the intentional species is almost literally anticipated by Sceptic opponents of Stoic cognitive psychology. The Sceptical critique regards mainly the status and function of mental representations in sensible and intellectual cognition. Let us now turn to some specific points of this critique, starting with the nature of the cognitive impression.

Diogenes Laertius reports that Zeno provides the following ontological characterization of cognitive presentations:

A notion or object of thought is a presentation to the intellect, which though not really substance nor attribute is quasi-substance or quasi-attribute.<sup>126</sup>

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esprits vitaux ou animaux sont bien entendu, des «corps», mais des corps subtils: ainsi l'objet des sens, grossièrement matériel en lui-même, revêt-il dans le sens le type d'être, toujours matériel, mais subtil, qui est celui des «esprits», «esse spirituale»." In the following sections, I examine Averroes' role in the origin of the medieval species doctrine (cf. § 3.3) and also the translation of the Aristotelian *eidos* with species (§ 4). R.A. Gauthier presumes that the sensible *eidos* in Aristotle can be translated with "espèce", just as William of Moerbeke did (cf. § 4.3). This is misleading, however, because Aristotle did not distinguish, unlike Thomas Aquinas and many other Scholastics, between known forms and mediating species. A striking example of the fact that the Stoic tradition was not known directly is provided by Albert the Great in *De anima*, III, tr. 2, c. 8, p. 188, where he cites Plato as "pater et princeps Stoicorum"; under the pejorative label of "Stoic", Albert includes also Socrates, Pythagoras, Avicenna, Dionysius, sometimes Augustine, and their followers on certain points. Frequent attacks on Stoics or Platonists are to be found in his *Physica*, *De natura et origine animae*, *Metaphysica*, and his comment on the *Liber de causis*; see J.A. Weisheipl, "The life and works of St. Albert the Great", in *Albertus Magnus and the Sciences*, ed. J.A. Weisheipl, Toronto 1980, 13-51, on p. 32. For Albert's polemics with the "Platonici", see also ch. II, § 2.1. On the influence of Stoic philosophy on medieval thought in general, see G. Verbeke, *The presence of Stoicism in Medieval Thought*, Washington-D.C. 1983. See also M. Lapidge, "The Stoic inheritance", in *A History of Twelfth-Century Western Philosophy*, ed. P. Dronke, Cambridge 1988, 81-112.

<sup>125</sup> See Sextus, *Adv. Math.*, VIII.409.

<sup>126</sup> *Lives*, VII.61. For related views on mental similitudes and species, see Abelard (ch. II, § 1.1) and Peter of Spain (ch. II, § 1.6). Giordano Bruno will describe the ideal shadow, similar in nature and function to the Stoic cognitive representation, as neither substance nor accident; cf. *De umbris idearum*, ed. R. Sturlese, Firenze 1991, 40; for discussion, see ch. VIII, § 3.3, in vol. II (forthcoming).

Produced by (and in) sensible reality, and yet belonging to the domain of the mental, Stoic presentations are quasi-entities<sup>127</sup>. They are ontologically comparable to the intelligible species, as well as to the cognitive contents of medieval cognitive psychology endowed only with an *esse diminutum*<sup>128</sup>.

This "intermediate" ontological status of mental representations is thoroughly criticized by Sextus. The following points in his criticism of their function are particularly significant for the main theme of this work. The affection of the soul caused by sensible data cannot be acknowledged as criterion of true knowledge: nothing guarantees that the affection adequately discloses the object which produced it<sup>129</sup>. Furthermore, Stoic presentations are posited 'between' percipient subject and sensible object, and thus have two sides concerning, respectively, their relationships with the presented object and the subject experiencing the presentation<sup>130</sup>. Sextus formulates various objections against this view. It blurs the distinction between rational and irrational faculties, that is, between intellect and senses: if the intellect receives the affection of the senses, then it is moved by the senses and is no longer characterizable as thought<sup>131</sup>. And even granting that the rational intellect receives the affection of the senses, this does not entitle one to conclude that the intellect gets to know external objects:

For external objects are unlike our affections, and the presentation is far different from the thing presented,—that of a fire, for instance, from the fire, for the latter burns whereas the former is not capable of burning. Besides, even if we grant that external objects are

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<sup>127</sup> Cf. Hülser, *Die Fragmente zur Dialektik der Stoiker*, fragm. 316. The Stoics maintain that the interaction of soul and body must be straightforwardly causal. Therefore, they are dogmatically committed to physicalism. However, their general physicalist view does not settle all psychological issues, because there are 'things', such as *lekta*, that subsist, without being physical. See for discussion, Annas, *Hellenistic Philosophy of Mind*, 38, 47f.

<sup>128</sup> See ch. IV, § 1.5, for a discussion of the notion of "esse diminutum". This notion plays a role, in another metaphysical context, in the ontological determination of the idea in modern philosophy; cf. Descartes on the objective being of ideas, in *Meditationes*, book II and *Responsio ad Vas Objectiones*, discussed in ch. XI, § 1.2.

<sup>129</sup> *Adv. Math.*, VII.163-164: there exists no presentation of such a kind that it cannot be false.

<sup>130</sup> Cf. *Adv. Math.*, VII.167-69.

<sup>131</sup> *Adv. Math.*, VII.356; cf. 304-305. That the same thing could be both intellect and sense, is for Sextus a clear indication that the Stoics are utterly simple-minded; cf. *idem*, 307.

similar to our affections, it is not certain that by receiving our affections the intellect will apprehend external objects. For things similar to certain things are other than those things to which they are similar.<sup>132</sup>

With his criticism of Stoic mental representations, Sextus anticipates two main themes of the medieval opposition against the intentional species: (i) the intellect cannot be affected by the senses; and (ii) granting that this is possible, one can only conclude that sensible or intelligible representations, rather than the objects causing them, can be known<sup>133</sup>. Like the Stoics, many medieval philosophers derive from Aristotle the idea that there is a basic continuity between sensible reality, the senses, and the intellect. Sextus maintains that this view is absurd<sup>134</sup>.

Other problematic aspects of the Stoic doctrine are isolated and discussed by Sextus. He claims that the Stoics introduce a vicious circle between the subsistent external object to be known and the apprehensive presentation derived from it:

For in order that we may learn the subsistent they send us off to the apprehensive presentation, saying that the subsistent is that which excites an apprehensive presentation; and in order that we may get to know the apprehensive presentation they send us back to the subsistent.<sup>135</sup>

Sextus obviously rejects the idea of an instrumental presentation, jointly produced by the intellect and the senses, not primarily known and yet necessary for grasping external objects. His main argument to this effect—purporting to show that if one admits a mediating presentation, this should be identified with the thing

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<sup>132</sup> *Adv. Math.*, VII.357.

<sup>133</sup> The latter point is a serious objection against several representational theories of perception. See the Introduction.

<sup>134</sup> *Adv. Math.*, VII.381: "But let it be granted also that presentation is an impression of the regent part; yet since such an impression is not announced to the regent part otherwise than through the sense (...), I want to know whether the alteration that takes place in the regent part is of the same sort as that of the sense, or different. And if it is the same, since each of the senses is irrational, the regent part too, being altered, will be irrational and in no respect different from sense; while if the alteration is different, it will not receive the presented object exactly as it exists, but the existent object will be one thing and the presentation formed in the regent part something different. And this again is absurd." Cf. *idem*, 382-90.

<sup>135</sup> *Adv. Math.*, VIII.86. Also Epicurus is charged of circular reasoning in his views on notion and preconception; *idem*, VIII.332a-336a.

which is primarily known—will be echoed in the early 14th century by Durandus of Saint-Pourçain<sup>136</sup>.

Let me finally mention, as a further anticipation of the species controversy, that Sextus charges Stoic epistemology with an infinite regress in the series of possible mediating entities of knowledge<sup>137</sup>. The same type of argument will be used against the mediating role of intelligible species between material objects and spiritual intellect<sup>138</sup>.

Although one may legitimately speak of 'ideal' anticipations of the medieval and Renaissance species-controversy in the discussion between Stoics and Sceptics, it is impossible to show that these classical philosophical views actually weighed on medieval cognitive psychology<sup>139</sup>. There are, however, significant doctrinal parallels.

<sup>136</sup> *In II Sent.*, dist. 6, q. 6, 139va: "omne illud per quod tamquam per repraesentativum potentia cognitiva fertur in alterum est primo cognitum." Cf. ch. IV, § 2.1. Other outstanding opponents, such as Henry of Ghent and William of Ockham, will consider the intelligible species as an obstacle between the human mind and its object; see ch. III, § 3.2, and IV, § 3.1.

<sup>137</sup> *Outlines of Pyrrhonism*, III.241: "But the apprehensive impression is indiscoverable; for every impression is not apprehensive, nor is it possible to decide which one of the impressions is the apprehensive impression, since we cannot simply decide by means of every impression which one is apprehensive and which not, while we require an apprehensive impression in order to determine which is the apprehensive impression we are wrecked on the *ad infinitum* fallacy, since we are asking for another apprehensive impression so as to determine the impression taken to be apprehensive."

<sup>138</sup> Cf. ch. III, § 3.2 and ch. IV, § 3.1.

<sup>139</sup> Cf. G. Verbeke, *The Presence of Stoicism in Medieval Thought*, vii: "The main difficulty in studying the topic under consideration is the fact that in many instances medieval authors themselves were unaware of their having anything to do with Stoicism." The work of Diogenes Laertius, though at least partially translated during the Middle Ages, is not referred to during the species debate. In the 12th century a translation, now lost, of Diogenes' *Lives* circulated (probably made by Henry Aristippus, ca. 1156-60); see *Liber Alcidi de immortalitate animae*, ed. P. Lucentini, Napoli 1984, pp. xcix-ciii, cv-cvi. Sextus' writings were very scarcely known in the West during the Middle Ages. We know of three early fourteenth-century manuscripts of a complete Latin translation of the *Outlines of Pyrrhonism*; see Ch.B. Schmitt, "The rediscovery of Ancient skepticism in modern times", in *The Skeptical Tradition*, ed. M. Burnyeat, Berkeley-London 1983, 225-251, on p. 227, and notes 4, 6 and 54, for bibliographical references regarding the medieval diffusion of Sextus. Walter Burley's *Lives of the Philosophers*, which was somehow based, either proximately or remotely, upon Diogenes Laertius' work, did not contain a chapter on Pyrrho. Greek manuscripts of Sextus circulated in Italy from the early 15th century. For the translation and diffusion of Sextus and Diogenes, see also J.T. Muckle, "Greek works translated directly into Latin before 1350", in *Mediaeval Studies* 4(1942), 33-42; *idem*



Any view of perception and knowledge introducing mediating representational principles, which originate in the external world or in sensory representations, presupposes that the human soul is affected by sensible objects. It is thus plain that such an impression doctrine is more congenial to the overall perspective of a materialistic psychology. Nonetheless, the Stoics encountered serious difficulties in defining the 'mixture' of body and corporeal soul<sup>140</sup>. Some of these problems are of a very general character, and must be addressed by any theory of mediating representation, even under the favourable assumption (actually made in Stoic theory of knowledge) that there is no ontological duality between soul and body<sup>141</sup>. This hypothesis was rejected by medieval philosophers invariably endorsing the spirituality of the human intellect. Moreover, most of them rejected innate contents as well. For these reasons, some kind of mediation between sensible reality and the immaterial intellect was a compelling requirement for medieval cognitive psychology: it was, as it were, more urgently needed here than in Stoic accounts of knowledge acquisition, and much more problematic, too.

The medieval theory of sensible and intelligible species was devised to bridge the gap between sensible reality and the intellect. This doctrine is faced with additional difficulties with respect to the Stoic cognitive impression: if a sensible, impressed species is conceivable in the case of the sensible soul—an entity which is not thoroughly immaterial—many authors reject the idea that a spiritual intellect can accept anything from 'below' its own level<sup>142</sup>. It is thus not surprising, no matter how vital its function was, that the

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5(1943), 102-114, on pp. 110 and 114; L.M. de Rijk, *Scepticisme en criticisme in de antieke en middeleeuwse wijsbegeerte*, Assen 1970, 17; W. Cavini, "Appunti sulla prima diffusione in occidente delle opere di Sesto Empirico", *Medioevo* 3(1977), 1-20.

<sup>140</sup> Cf. Watson, *The Stoic Theory of Knowledge*, 18-19; A.A. Long, "Soul and body in Stoicism", in *Phronesis* 27(1982), 34-57.

<sup>141</sup> J. Annas, "Stoic epistemology", in *Companions to Ancient Thought*, vol. I, cit., 184-203, on p. 191: "The Stoic theory explicitly interposes a representational object—the appearance—between the person and the world. And when this is coupled with the claim that some, indeed most of these appearances can be relied upon to give us knowledge about the world, the gap between person and world is going to seem crucial, and the representational nature of the item bridging it, problematic."

<sup>142</sup> Stoic and Neoplatonic elements will be amalgamated in the doctrine of the sensibly impressed species, cf. ch. II, § 2.3. This doctrine heavily affected, in particular after Thomas' death and the 1277 condemnation, the controversy on intelligible species, initially not conceived of as *impressed*. See ch. III.

intelligible species became an eternal apple of discord, during the Middle Ages and in Renaissance Aristotelian disputes. This notion was generally accepted by Spanish schoolmen, eventually disappearing from the agenda of the theory of knowledge only with modern non-aristotelian philosophy.

§ 2. CLASSICAL PHILOSOPHY THROUGH THE SIEVE OF THE  
SPANISH SCHOOLMEN: 'ANCIENT' OPPONENTS OF THE SPECIES

The main philosophical figures of the past cited in the medieval debate on the species are Aristotle, Augustine and the Arabic commentators. Besides the Stagirite, no other classical author is appealed to in the dispute. Italian Renaissance participants to the debate are mainly concerned with the correct interpretation of Aristotle, and frequently appeal to the authority of Averroes and Neoplatonic commentators.

Starting with the publication of the *De anima* commentary of Michael de Palacios (1557), and more evidently with the commentary of Franciscus Toletus (first edition 1575), the number of classical authors referred to in this controversy increases significantly—Theophrastus, Themistius, Galen, Plotinus and Porphyry are cases in point. In many cases, Spanish schoolmen confidently discuss the views of these authors, without a direct acquaintance with their writings—citing or simply copying from predecessors. The result is a peculiar distortion of the historico-doctrinal perspective. Blindly trusting the authority of contemporaries or immediate precursors, later schoolmen do not verify whether recent or ancient doctrines are meant; in most cases, they do not investigate the authenticity of their sources, and show no interest whatsoever for the question whether the cited texts (still) exist.

Why are the representatives of the Second Scholasticism so interested in citing the opinions of classic philosophers? This is a puzzling question, also in view of the fact that ancient authors are mostly presented as opponents of the species doctrine, which is en-

dorsed by the majority of Spanish schoolmen<sup>143</sup>. To the best of my knowledge, the tradition of the ‘ancient opponents’ of the species probably begins with Michael de Palacios: he states that according to Gregory of Nyssa’s *De viribus animae* Galen rejects the species in sensation<sup>144</sup>.

Franciscus Toletus, in his commentary on the *De anima*, distinguishes between three different types of opponents of the sensible species. Ockham, Durandus of Saint-Pourçain and Gabriel Biel express one type of criticism<sup>145</sup>; the chief representatives of a second view are Plato and Empedocles; and finally the more interesting critical view for the specific context of our discussion allegedly originates with Galen:

Prima fuit Galeni, quem citat Greg. Nyss. lib. de viribus animae, cap. 2. fuit etiam Plotini Aenne. a4. & quorundam Platoniorum, quod sensus non indigent aliqua specie recepta ad sentiendum, sed obiecta sua in debita distantia proposita percipiunt absque ullo alio interveniente (...) Si istae species essent in sensibus, ideo essent, quia ipsae essent rerum imagines, sed hoc est impossibile; ergo non sunt species.<sup>146</sup>

The *De viribus animae* is mentioned again in later works, and the authority of Galen and Plotinus, occasionally with explicit references to their writings, is frequently invoked<sup>147</sup>. In the third part of his commentary, addressing a question concerning the *species intelligibilis*, Toletus introduces Theophrastus and Themistius as classic

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<sup>143</sup> Incidentally, John Buridan already was convinced that Ancient philosophers rejected the species as superfluous; cf. Ioannes Buridanus, *In tres libros de anima*, In *Quaestiones et decisiones physicales (...) Alberti de Saxoni (...) Buridani in Aristotelis (...)*, ed. Georgius Lokert, Paris 1518, XXVIvb-VIIra: “Opinio antiquorum fuit de ista quaestione non solum quod species intelligibilis esset idem cum actibus intelligendi: immo actus intelligendi sit idem cum ipsa anima & cum hoc habitus intellectuales.”

<sup>144</sup> Michael de Palacios, *In tres libros Aristotelis de anima commentarij*, Salamanticae 1557, 193ra: “Hoc tamen (...) movit medicorum principem Galenum ut species negaret venire ab obiecto in facultate sensitiva referente .D. Grego. in lib. de viribus animae .c.2.”

<sup>145</sup> For their views on species, see ch. IV and V.

<sup>146</sup> Franciscus Toletus, *Commentaria Unà cum Quaestionibus, In tres libros Aristotelis De anima*, Venetiis 1605 (first edition Köln 1575), 111vb and 112ra.

<sup>147</sup> The Venetian patrician Marcantonio Mocenigo classified Plotinus as opponent of species produced by external sensible forms in the soul; cf. his *Paradoxa, Theoremataque, Ex Aristotelis philosophia deprompta*, Venetiis 1559, 58v. In the same context, Mocenigo refers to Plotinus’ theory of vision, which excludes any medium; see 73v-74r. For discussion of Mocenigo’s views, see ch. VIII, § 1.3.

opponents of these cognitive principles<sup>148</sup>. Thus, Toletus seems to draw a distinction between the critics of sensible species and those of intelligible ones<sup>149</sup>.

In his *De anima*, Suarez addresses the issue of the intentional species and extends Toletus' list:

In hac re est opinio asserens conjunctionem obiecti cognoscibilis cum potentia cognoscente non esse necessarium ad cognoscendum: quod in virtute asserunt omnes, qui negant species intentionales sensibiles, vel etiam intellectuales, quam opinionem tribuit Galeno Gregorius Nyssenus, libro de Viribus animae, capite secundo. Divus Augustinus, etiam lib. de Quantitate animae, cap. 23, videtur sentire visionem non fieri potentia aliquid recipiente. Idem tenet Seneca, lib. 1, Naturalium quaestionum, ac tribuunt Platoni Plotinus, Enneade 4, et Porphyrius, lib. de Sensu: subscribunt eidem opinioni Ocham (...).<sup>150</sup>

First of all, let us notice that the unknown *De sensu* of Porphyry is mentioned here, in addition to the *De viribus animae* of Gregory of Nyssa. Furthermore, the *acte de presence* of Seneca is rather surprising<sup>151</sup>, though Suarez's use and interpretation of classic authors is often wanting in rigour and appropriateness. In a passage following the text quoted above, when drawing the distinction between cognitive act and reception of the species, Suarez summarizes the views of a variegated group of authors, including mentioned before

<sup>148</sup> *In de anima*, 168vb: "Prima fuit eorum, qui negaverunt species intelligibiles esse necessarias ad intelligendum praeter phantasmata: hi fuerunt Themist. & Theoph. ut supra meminimus. Similiter Avempe. Epist. de luce, et inter Theologos Ioannes Bacho. 1. Sent. qu. 2. prologi, & Enri. quodlib. 5. qu. 14. omnes hi dicunt sufficere phantasmata; intellectumque in ipsis cognoscere naturas repraesentatas universales absque ulla specie, sicut visus colores videt in subiectis absque specie ulla." The "Bacho" in this quotation is John Baconthorpe, and "Enri" is Henry of Ghent; see for their positions ch. IV, § 2.2 and ch. III, § 3.2.

<sup>149</sup> During the Middle Ages, indeed, authors such as Henry of Ghent accept sensible species and reject intelligible ones; cf. ch. III, § 3.2.

<sup>150</sup> Fr. Suarez, *De anima*, in *Opera omnia*, t. III, Paris 1856, 613b. The *De anima*, written already in 1573, was published only after his death in 1621. Towards the end of his life, Suarez started to rewrite this work, but he finished only the first two books. Recently a critical edition appeared, ed. S. Castellote, 3 vols. Madrid 1978-1991. Augustine's role in the species controversy is examined in ch III, § 1.

<sup>151</sup> In the first book of his *Quaestiones Naturales*, Seneca's analysis of meteors, halos, the rainbow, and other celestial phenomena, suggests, now and then, that he endorses an emission theory of vision.

as opponents of the species<sup>152</sup>. In particular, Galen and Gregory of Nyssa are both explicitly cited next to Nemesis of Emesa<sup>153</sup>.

The *De anima* commentary of the Collegium Conimbricense narrows down the list of ancient authors to those already referred to by Toletus<sup>154</sup>. Franciscus Murcia de la Llana considers just Galen (from Gregory of Nyssa) and, quite interestingly, claims that he rejected *both* sensible and intelligible species<sup>155</sup>. Antonio Rubio follows the example set by the College of Coimbra, and specifies more precisely the quotation from Themistius<sup>156</sup>. Hurtado de Mendoza does not cite classical authorities<sup>157</sup>. Toletus' selection reappears in the commentary of the Collegium Complutense: Galen ("ut Greg. Nyss."), Plotinus, some unspecified Platonic authors ("quidam Platonici"), Themistius, and Theophrastus<sup>158</sup>. John of Saint Thomas mentions again Plotinus, Galen, and Porphyry<sup>159</sup>. Elsewhere in his

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<sup>152</sup> *De anima*, 625b: "Est communissima in lib. 2, de Anima, cap. 5, ubi Philoponus, Themistius, Simplicius, et alii expositores, idemque Themistius, lib. 3, cap. 15, pronunciat notionem esse animae actionem: et de memoria et reminiscencia, c. 11, imaginationem non esse impressionem speciei. Alexander quoque 1, de Anima, cap. 11 et 19, aperte distinguit sensationem a receptione speciei. Commentator, libro secundo, text. 149, Galenus 7, de Placitis, cap. 14, Gregorius Nyssenus de Viribus animae, cap. 1 et 4, Nemesis, lib. de natura Hominis, cap. 4, idem sentit S. Thomas (...)." Since I am only concerned with classical philosophers involved in the species-controversy, I do not examine here the doctrine of the distinction between act and species.

<sup>153</sup> I discuss below the alleged commonalities between these authors.

<sup>154</sup> Collegium Conimbricense, *In de anima*, cit., 293b: "Ex eorum numero fuere Themistius, Theophrastus, & Avempace: qui tamen in constituendo intellectu discordes fuere, ut superius diximus." With respect to the "negantes" of the sensible species they refer to Democritus, Alexander, and to "Porphyrius in libro de sensu, Plotinus Enn. 4. lib. 5. Galenus lib. 7. de decretis Hippocr. cap. 6."; cf. *idem*, 128a.

<sup>155</sup> Franciscus Murcia de la Llana, *Selecta circa libros Aristotelis de anima* (...), Madrid 1604, 158ra: "Circa species intelligibiles referri solet sententia Galen. ut refert Grego. Nisen. lib. de viribus animae. c. 2. asserentis in universum non dari species impressas, & specialiter de speciebus intelligibilibus."

<sup>156</sup> Antonius Ruvius, *Commentarii in libros Aristotelis Stagyrtae* (...), *de Anima* (...), Lugduni 1613, 682: "Themistius, III, c. 20".

<sup>157</sup> Petrus Hurtadus de Mendoza, *Disputationes de Universa philosophia*, Lugduni 1617, 872f.

<sup>158</sup> Collegium Complutense, *Disputationes in tres libros Aristotelis De anima*, Lugduni 1637, 448b and 449b.

<sup>159</sup> Johannes de Sancto Thoma, *Cursus philosophicus Thomisticus*, Taurini 1930-37 (first edition 1635), IV. pars: *De ente mobili animato*, 178a. John of Saint Thomas does not mention their works, but the editor refers to "Enn. IV. 5, 7, de decr. Hipp. c. 5", and to Porphyry "in libro de Sensu".

*Cursus*, John's argument for the species makes reference even to Dionysius the Areopagita<sup>160</sup>.

The peculiar practice of appealing to these ancient authors in the species debate is not peculiar for Spanish schoolmen<sup>161</sup>: it becomes a matter of routine during the Second Scholasticism<sup>162</sup>, and subsides (without completely disappearing, however) only in later commentaries and textbooks<sup>163</sup>.

The front line of the alleged 'classical opponents' of the species doctrine is formed by Theophrastus, Galen, Plotinus, Porphyry, and Themistius. However, one will search in vain their works or fragments for a criticism of species—or even just an oblique reference to them. The very notion, taken in its 13th-century meaning, was obviously unknown to these authors; even when they address the systematic issue dealt with by the species doctrine, the context is essentially different. Lacking an objective connection, a more likely source for these peculiar classical references is the erudition

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<sup>160</sup> Cf. *Cursus philosophicus*, 180b: "Similiter S. Dionysius 7. de Divinis Nominibus et saepius in libro de Coelesti Hierarchia intellectus angelorum dicit esse plenos formis seu speciebus." For the impact of this Proclean thesis on the species debate, cf. § 4.3 of this chapter. Subsequently, John of St. Thomas cites Augustine and Anselm; for a discussion of how Augustine's work is used in the species controversy, see ch. III, § 1.

<sup>161</sup> See *infra* for a similar interpretation of authors in this group by Pomponazzi, Marcantonio Zimara, and Mocenigo. See also Pierre Gassendi, *Syntagma philosophicum*, in *Opera*, Lyon 1658, vol. II, 373B.

<sup>162</sup> See Raphaele Aversa, *Philosophia metaphysicam physicamque complectens quaestionibus contexta*, 2 vols., Romae 1625-27, 657a: sensible species are rejected by Porphyry, Plotinus and Galen; the opposition against intelligible species is restricted to Empedocles and Plato (p. 818a). Ioannes Poncius, *Integer Philosophiae cursus ad mentem Scoti*, Pars III, Romae 1643, 467b: intelligible species are not necessary according to Themistius and Theophrastus. Bartholomaeus Mastrius & Bonaventura Bellutus, *Disputationes in Aristotelis libros De anima*, Venetiis 1671 (first ed. 1643), 182b-183a: "Prima opinio negat dari has species sensibiles (...) citantur Porph. lib. de sensu, Plotin. enead. 4. lib. 5. Dur. 2. d. 3. q. 6. (...)." <sup>163</sup> See, for example, Balthazare Tellez, *Summa universae philosophiae*, Ulyssipone 1641, pars quarta, 306 and 334, who refers to medieval and Renaissance authors only. Ildephonsus De Peñafiel, *Cursus integer philosophicus*, Lugduni 1655, p. 507b, cites Galen and Seneca. Sebastian Izquierdo, *Pharus scientiarum*, Lugduni 1659, 3b, refers to Themistius and Theophrastus. Gabriel a Sancto Vincentio, *In libros Aristotelis De ortu et interitu seu De generatione et corruptione. In libros de Anima, Parvorum Naturalium, & Metaphysicorum*, Romae 1670, cites on p. 308 only Plato against the species doctrine, and refers on p. 445a to John Ponce, who invoked Themistius and Theophrastus; cf. ch. X, § 3.5.1. Georgius de Rhodes, *Philosophia peripatetica, ad veram Aristotelis mentem*, Lugduni 1671, 449a, mentions Galen, Plotinus and Porphyry.

of Spanish schoolmen, and their tendency to quote in their arguments as many authorities as possible. This attitude inevitably leads them to project their own problematics into a distant past. These considerations do not exclude, however, that the works of these Ancient authors contain doctrinal elements retrospectively throwing a new light on the species issue. In order to explore this possibility, one has to examine in some detail their philosophical ideas.

Theophrastus' cognitive psychology and noetics are recorded in a small number of fragments, to be found chiefly in the works of Themistius, Simplicius, and Priscianus<sup>164</sup>. Important themes in Theophrastus are the ontological status of the potential intellect<sup>165</sup>, the intellect as principle of cognitive acts and knowledge as the unity between mind and objects<sup>166</sup>. It is likely that Spanish schoolmen knew Theophrastus from the *De anima* paraphrase of Themistius. If this is the case, however, an additional problem arises: since Themistius does not quote fragments concerning sense perception, what are the grounds for the schoolmen to claim that Theophrastus is an opponent to *sensible* species?<sup>167</sup> The only plausible solution I can think of is that Toletus and his colleagues were also acquainted with Ficino's Latin edition and commentary of Priscianus' *Metaphrasis in Theophrastum*<sup>168</sup>. In this translation, Ficino translates

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<sup>164</sup> These fragments are published by E. Barbotin, *La théorie aristotélicienne de l'intellect d'après Théophraste*, Louvain-Paris 1954, 245-288. It cannot be excluded that Arabic writers had access to material from Themistius that is now lost and even to Theophrastus' own *De anima*. Cf. P.M. Huby, "Medieval evidence for Theophrastus' discussion of the intellect", in *Theophrastus of Eresus. On His Life and Work*, ed. W.W. Fortenbaugh, New Brunswick-Oxford 1985, 165-181.

<sup>165</sup> Fragmentum Ic, in E. Barbotin, *La théorie aristotélicienne de l'intellect d'après Théophraste*, cit.; for discussion of this text, cf. E. Barbotin, *o.c.*, 141. If one carries the "tabula rasa" metaphor too far, the intellect becomes no more than a collection of fleeting impressions. Theophrastus, therefore, conceives of the possible intellect as a real principle of the cognitive act. A similar problematic is addressed, during the Middle Ages (see ch. II, § 1.5, ch. III, § 3.3, § 4.2, § 5.1) and during the Renaissance, see, e.g., the position of Giulio Castellani, (discussed in ch. VIII, § 2.1).

<sup>166</sup> Cf. Fragmenta Ib, II, III, VI, Xa-b.

<sup>167</sup> See, e.g., Toletus, *In tres libros Aristotelis De anima*, 111vb and 112ra.

<sup>168</sup> Cf. *Expositio in interpretationem Prisciani Lydi super Theophrastum*, in Marsilio Ficino, *Opera omnia*, 2 vols., Torino 1983 (reprint of the first edition: Basileae 1576), 1801-1824 and *In Prisciani Lydi super Theophrastum de Phantasia & Intellectu*, in *idem*, 1824-1836. Priscianus' epitome of Theophrastus' *De sensu*, however, is known only in a 9th-century Latin translation; cf. A. Cameron, "The last days

*eidos* with "species". Furthermore, it is quite evident that, in his interpretation of Theophrastus' thought, Priscianus argues at some length for a view of sense perception as an essentially active process unaffected by external stimuli or species<sup>169</sup>. A remarkable result of this doctrinal transformation is that the Latin Theophrastus could be reasonably interpreted by our Spanish authors as an opponent of the species doctrine<sup>170</sup>. Finally, one has to notice that Marcantonio Zimara and Francesco Piccolomini, before many of the Spanish schoolmen mentioned here, made already reference to a view attributed to Theophrastus and concerning the intelligible species<sup>171</sup>.

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of the Academy at Athens", in *Proceedings of the Cambridge Philological Society* 195(1969), 7-29, on p. 24.

<sup>169</sup> The active nature of sense perception is a widely shared tenet among Neoplatonic authors; cf. Plotinus, *Enneades* VI.7.7. The active character of sensation, however, is already emphasized by Alexander; see *De anima*, 60, ll. 6-8; *Quaestiones Naturales*, 98. Cf. also P. Henry, "Une comparaison chez Aristote, Alexandre, et Plotin", in *Les sources de Plotin*, Genève 1960, 427-449, on p. 437 and 444. It is well-known, that Augustine was deeply influenced by this Neoplatonic view; cf. ch. III, § 1. Recently, Priscianus has been suggested as the author of the *De anima* commentary attributed to Simplicius; cf. F. Bossier & C. Steel, "Priscianus Lydus en de *In de anima* van Pseudo(?)-Simplicius", in *Tijdschrift voor Filosofie* 34(1972), 761-821 (summary in French, 821-22); their views are critically discussed by I. Hadot, *Le problème du néoplatonisme Alexandrin: Hiérocles et Simplicius*, Paris 1978, 193f. See also, ch. VIII, § 1.1, in vol. II.

<sup>170</sup> Cf. *Expositio in interpretationem Prisciani Lydi super Theophrastum*, 1804: "Quando igitur etiam Theophrastus ait sensum fieri similem sentiendis, secundum species atque rationes absque materia sic admittemus, ut non simpliciter ab externis species inferantur, sed à rationibus intimis in vita secundum actum sensualem constituentur." Priscianus rejects the theory of sensation "per effluxum", put forward by Democritus and Epicurus; cf. p. 1815. The immaterial senses are not touched or affected immediately by the material sensibles; only their *instrumenta*, called also *media* are immediately affected; cf. 1817f. Priscianus, inspired by the views of Iamblichus, claims that the intellect has innate "species"; see *Super Theophrastum de Phantasia et intellectu*, 1831: "Assero igitur ipsum potentia intellectum tum eum qui participatur ab anima, tum potentiam ipsam rationalem, quando sincere utitur ratione, neque unà cum sensu & phantasia ad exteriora protenditur, tunc species rationesque immateriales sibi insitas contemplantem secundum has ipsas excogitare species, tum à materia segregatas, tum materiae distinctas." The general context of this section is the distinction between separate and materialized forms, developed by Alexander, and here conceived of by Priscianus against the doctrinal background of Iamblichus' theory of the descending soul, a view which is also present in Simplicius; for discussion of these issues, cf. C.G. Steel, *The Changing Self. A Study in Later Neoplatonism: Iamblichus, Damascius and Priscianus*, Brussels 1978.

<sup>171</sup> For Marcantonio Zimara, see *infra*. Piccolomini refers in *De humana mente*, 1304, to Theophrastus' opinion on species; see also ch. IX, § 1.3.



One can safely assume that, during the 16th and 17th centuries, Plotinus' *Enneads* were mostly read in Ficino's translation, the printed editions of which generally included Ficino's own commentary as well<sup>172</sup>. It can hardly be doubted that also the later schoolmen used this edition. Now, in the fourth *Ennead*, Plotinus asks whether sight is possible in the absence of any intervening medium, such as air or some other form of what is known as transparent body<sup>173</sup>. Plotinus claims that there is no need of bodily substances between the eye and the illuminated object. Although an intervening material may accidentally impinge upon the eye, it essentially adds nothing to our seeing powers and actually hinders vision<sup>174</sup>. When one conceives of vision as a forthgoing act independent of incoming stimuli from the object, there is no need to postulate an intervening substance. Anticipating in a certain sense the criticisms of mediating species by Henry of Ghent and Ockham, Plotinus asserts that there is no direct knowledge of the object of vision, if perception is to depend upon previous impressions made upon the air: one would know the object only through an intermediary entity, in the same way one is aware of heat at a distance. In the latter case, however, warmed intervening air warms us by contact, whereas sight is not produced by contact<sup>175</sup>. In fact, the most convincing proof that vision does not depend upon any sort of transmission through the air is that we can see a fire in the darkness, the stars, and their very shapes<sup>176</sup>. According to Plotinus, every kind of perception seems to depend on the fact that our universe is a living whole sympathetic to itself<sup>177</sup>.

This criticism of intermediary entities in vision is related to Plotinus' argument against Stoic theories of perception. He draws a sharp distinction between the affection attributed to the bodily organ of sense and what the soul does, although their respective roles

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<sup>172</sup> Plotinus, *Opera*, cum Latina Marsilii Ficini interpretatione & commentatione, Basileae 1580. This work was well known to many Renaissance Aristotelians too; see, for example, Vernia, Nifo, and others; cf. Part II, ch. VI.

<sup>173</sup> During the Renaissance, Plotinus' theory of vision is referred to by Marcantonio Mocenigo, in the context of his criticism of the species doctrine; cf. ch. VIII, § 1.3.

<sup>174</sup> *Enneads* IV.5.1.

<sup>175</sup> *Enneads* IV.5.2.

<sup>176</sup> *Enneads* IV.5.3.

<sup>177</sup> *Enneads* IV.5.3. For discussion, see E.K. Emilsson, *Plotinus on Sense-Perception: A Philosophical Study*, Cambridge 1988, 44f.

are not always clearly defined. Perceptions occur by means of bodily organs, which mediate soul with the external world<sup>178</sup>. They are not imprints, however, and should not be thought of as seal-impressions<sup>179</sup> either. In any perception attained by means of sight, the object is grasped when the mind projects itself 'outwards'. The same point made above can be restated in the following way: if what we accept are imprints, then we would never see the objects. Indeed, we would only see the vestiges they leave within us, that is, nothing more than shadows<sup>180</sup>. Therefore, sense perception has a fundamentally active character, and the sensible object is needed only to excite our soul. In perception, the mind expresses something not already contained within it: by rescuing the forms of things from a low-grade, spatial existence it reinstates them at the intelligible level<sup>181</sup>.

The writings of Galen were printed many times during the Renaissance, and were widely known all over Europe<sup>182</sup>. Only book VII of his *De Hippocratis et Platonis placitis* is referred to in the arguments of Spanish schoolmen. There he defends a Platonic theory of vision, based on the emission of lightbeams by the eye, against the Stoic doctrine of sensible impressions<sup>183</sup>. The original aspect of Galen's approach to vision is in the special relationship he postulates between the outgoing visual ray, sunlight and air—the latter functioning as a sort of extension of the nerves. When ex-

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<sup>178</sup> The bodily nature of sense organs serves as a link with the sensible, whereas the soul-power that resides in them provides a link with the intelligible; cf. Emilsson, *Plotinus on Sense-Perception*, 67-70, 141-145.

<sup>179</sup> Cf. *Enneads* IV.5.3, IV.6.1, and IV.7.6, which is directed against the impression doctrine of Cleanthes—which was already corrected by Chrysippus, as we have seen in § 1.4.2.

<sup>180</sup> *Enneads* IV.6.1.

<sup>181</sup> *Enneads* IV.6.2-3; see also Emilsson, *Plotinus on Sense-Perception*, 133-140.

<sup>182</sup> See, A. Wear, "Galen in the Renaissance", in *Galen: Problems and Prospects*, ed. V. Nutton, London 1981, 229-262; V. Nutton, "De placitis Hippocratis et Platonis in the Renaissance", in *Le opere psicologiche di Galeno*, eds. P. Manuli & M. Vegetti, Napoli 1988, 281-309; P. Moraux, "Le De anima dans la tradition grecque. Quelques aspects de l'interprétation du traité, de Théophraste à Thémistius", in *Aristotle on Mind and the Senses*, cit., 281-324, on pp. 291-294. Also Ludovico Buccaferrera and Marcantonio Genua will refer to Galen; see, respectively, ch. VII, § 3.2.1, and VIII, § 1.2. In his analysis of the process of vision, also Pierre Gassendi cites the seventh book of Galen's *Placita*; cf. *Syntagma philosophicum*, in *Opera*, vol. II, 371A.

<sup>183</sup> Galen's visual ray theory may in fact be taken as an updated version of Plato's account in *Timaeus* 45d-e.

ternal light, the visual ray and air intermingle, the intermediate air, made sensitive by the outgoing pneuma, bears to the eye the same relation as the optical nerve to the brain<sup>184</sup>. There is no conclusive evidence, however, that all the Spanish authors we are concerned with had a direct knowledge of Galen's works. Palacios and Toletus, for instance, refer, for Galen's theory of vision, to Gregory of Nyssa's *De viribus animae*<sup>185</sup>. With this work of Gregory, Palacios and Toletus indicate a Latin translation of *De homine*, published for the first time in the second decade of the 16th century<sup>186</sup>.

Gregory's observations on Galen's theory of vision, expounded in chapter II of the fourth treatise of this collection, became the starting point in Spanish Scholasticism for the 'ancient opponents' of the species:

Caeterum Galenus concorditer cum Platone in septimo consonantiae libro de visu disserit sparsim quodammodo scribens ita. Si enim denu[m] ad oculum particula aliqua, vel virtus, vel spectrum, vel qualitas corporum quae videntur, perveniret: nequaquam eius quod videtur, magnitudinem cognosceremus: ut puta montis (si ita contingerit) maximi: tam magni enim idolum, nostri oculis incidere omniafariam est irrationabile.<sup>187</sup>

Shortly after this remark, Gregory refers also to Porphyry's *De sensu*, another author often listed in the ranks of classical opponents to the species<sup>188</sup>. *De sensu*, however, must be assumed as lost, and I will now seek a possible solution, through an examination of Suarez' *De anima*, for the puzzle of how a lost text can be related to a philosophical view developed only at a later time.

Suarez mentions Galen in the framework of two different problems. In one case, the problem seems totally unrelated to the work and thought of the Hellenistic physician<sup>189</sup>. However, the point that interests us in that context is that Galen is quoted together with Nemesius of Emesa, an author whose (translated) work was still

<sup>184</sup> Cf. Claudius Galenus, *De Hippocratis et Platonis placitis opus eruditum* (...), Ioanne Guinterio Andernaco interprete, Parisiis 1534, 100-115.

<sup>185</sup> Cf. the quotations in notes above.

<sup>186</sup> Gregorius Nyssae, *Libri octo. I. De homine; II. De anima; III. De Elementis; IIII. De viribus animae* (...), Argentorati 1513.

<sup>187</sup> Gregory of Nyssa, *De viribus animae*, f. XIIIv-XVr.

<sup>188</sup> *De viribus animae*, XVr: "Caeterum Porphyrius in lib. de sensu, neque conum, neque idolum, neque aliud quicque videndi causam esse ait".

<sup>189</sup> See *De anima*, 625a-b, where Suarez examines the distinction between cognitive act and species.

quite popular during the 16th century<sup>190</sup>. The fourth chapter of Nemesius' *De natura hominis*, referred to by Suarez, treats subjects unrelated to our problem. More interesting is chapter 5 of this treatise, where Nemesius cites Galen as maintaining that sensible knowledge does not presuppose some kind of "alteratio"<sup>191</sup>. The next chapter, concerning *De visu*, where he rejects the views of Aristotle and Epicurus<sup>192</sup>, provides evidence of his dependence on Plato and Galen; the latter is extensively quoted<sup>193</sup>. Porphyry's *De sensu*, which is referred to also by Suarez and John of Saint Thomas<sup>194</sup>, is cited in this chapter<sup>195</sup>. The modern editor of the Latin text of *De natura hominis* annotates that this work of Porphyry is known only on the basis of this reference<sup>196</sup>. Evidently, he ignores

<sup>190</sup> *De anima*, 625b; on Nemesius' fame in the Renaissance, cf. G. Verbeke, "Introduction", in Némésius d'Émèse, *De natura hominis*, Leiden 1975, xcii. For instance, also Marcantonio Genua, the leading representative of Simplician Averroism during the Renaissance, refers to Nemesius; cf. his *In tres libros Aristotelis de anima*, Venetijs 1576, 125r.

<sup>191</sup> *De natura hominis*, 72: "Est autem sensus non alteratio, sed cognitio alterationis; nam alterantur quidem sensus <...>. Est autem et ita diffinire sensum: sensus est receptio sensibilium. Videtur autem hic terminus non ipsius esse sensus, sed operum eius. Ideoque et ita determinant sensum: spiritus intellectualis a principali parte (id est cerebro) ad organa ordinatus. Est autem et ita diffinire: virtus animae dignoscitiva materialium. Sensus vero (id est membrum sensus) ita diffiniunt: organum receptionis sensibilium; et aliter: organum, id est membrum, per quod sentimus. Plato vero sensum dicit animae et corporis communionem ad exteriora. Virtus enim animae est, organum autem corporis; ambo autem per phantasiam (id est imaginationem) sunt resumptiva exteriorum." The editor refers to Galen, *De plac. Hippocratis et Platonis*, VII, 6. As a matter of fact, Nemesius refers to a distinction between sense and sense organ, not so sharply defined in Aristotle, but fundamental for the Neoplatonic reception of Aristotle's doctrine of sense perception. See, for instance, Plotinus, *Enneades*, I.1.7: the soul receives already purified sensible impressions, that is, as intelligible forms; the body is an instrument only. For discussion see also E.W. Warren, "Imagination in Plotinus", in *Classical Quarterly* 60(1966), 277-85, on the apprehension of external objects by the imagination. Cf. also *supra* for Priscianus' view and, on his epistemology, see C. Steel, *The Changing Self*, cit., 132f. Neoplatonics do not reject Aristotle's views on the psychology of cognition, and rather restrict its validity to the initial stages of the cognitive process; cf. S. Gersch, *From Iamblichus to Eriugena. An Investigation of the Prehistory and Evolution of the Pseudo-Dionysian Tradition*, Leiden 1978, 109.

<sup>192</sup> *De natura hominis*, 74: "Epicurei autem idola eorum quae apparent accidere oculis. Aristoteles autem non idolum corporeum, sed qualitatem per alterationem eius qui in circuitu est aeris a visibilibus usque ad visum devenire."

<sup>193</sup> Cf. *De natura hominis*, 74-75, where Nemesius cites *De plac Hipp.* c. 7; this chapter was also cited by some Spanish authors, cf. *supra*.

<sup>194</sup> Cf. *supra*.

<sup>195</sup> *De natura hominis*, 75

<sup>196</sup> Cf. *De natura hominis*, 75, in note.

the Latin translation of *De viribus animae* of Gregory of Nyssa. It is quite plausible that Suarez either read the *De viribus* of Gregory or simply trusted Nemesius<sup>197</sup>. We may also safely presume that John of Saint Thomas followed the example of Suarez or simply copied his work.

The role of Themistius in this historical maze is even more complicated: not only was he known for his own works, but Averroes often quoted him as an authority in his *De anima* commentary. Moreover, some Renaissance authors, such as Pomponazzi and Marcantonio Zimara, were convinced that Themistius faithfully expounded Aristotle in his *De anima* paraphrase, developing his independent ideas in the commentary to *Metaphysics* XII. This distinction between an exegetical and an original Themistius bears also upon the species doctrine<sup>198</sup>. In addition, specific terminological

<sup>197</sup> For Nemesius as a source of Gregory of Nyssa, see already Albert the Great, who misidentifies Gregory with Nemesius; cf. *De anima*, 190 and *Summa theologiae*, Pars II, q. 93, *Opera*, ed. Borgnet, vol. XXXIII, 201b.

<sup>198</sup> For example, Pietro Pomponazzi, *Quaestio de speciebus intelligibilibus*, in Pietro Pomponazzi, *Corsi inediti dell'insegnamento padovano*, vol. II, ed. A. Poppi, Padova 1970, 177-210, questions on p. 198 Averroes' interpretation of Themistius, and objects to the Commentator that he did not reject the species: "Sed, domini, est unum videndum hic: an quod Commentator imponit ipsi Themistio sit de intentione Themistii, scilicet quod intellectus speculativus sit aeternus et quod non dentur species etc. Et videtur quod illud quod Commentator sibi imponit non sit de intentione Themistii, quia Themistius expresse in sua *Paraphrasi* dicit intellectum recipere ipsas species, et quod intentiones imaginatas movent intellectum sicut obiectum sensus movet sensum etc., et breviter, per totum dicit quod intellectus intelligit per species etc." (A. Poppi refers in a note to p. 93-98 of the Greek edition of the *Paraphrasis*, ed. R. Heinze, Berolini 1899; in the translation of William of Moerbeke, pp. 212-223.) On p. 200, Pomponazzi observes: "Dico ergo quod Commentator verum sibi attribuit, et etiam quod dicunt quod Themistius in sua *Paraphrasi* dicat intellectum recipere etc., etiam verum dicitur, nec est contradictio; sed dico quod Themistius in *Paraphrasi* habuit modum commentantis, quia exponit ipsum Aristotelem et ideo voluit sententiam Aristotelis provalere secundum quod commentantis est; in XII *Metaph.* locutus est secundum opinionem propriam, et ideo verum sibi adscribit Commentator; et sic potestis solvere dubitationem, quia in *Paraphrasi* locutus est secundum expositionem Philosophi, et in XII *Metaph.* secundum opinionem propriam." For Themistius' own opinion, A. Poppi refers to *In Aristotelis Metaphysicorum librum lambda paraphrasis*, ed. S. Landauer, Berolini 1903, 8-10. The Greek original of this text is lost; Landauer's edition is based on a 13th-century Hebrew translation of the Arabic version. The Latin translation of the Hebrew text was prepared in 1558 by Moses Finzi. See, for discussion, S. Pines, "Some distinctive metaphysical conceptions in Themistius' commentary on Book Lambda and their place in the history of thought", in *Aristoteles. Werk und Wirkung*, ed. J. Wiesner, 2 vols., Berlin-N.Y. 1985-1987, vol. II, 177-204. See also below for Zimara's evaluation of Themistius.

problems are created by the Latin translation of his paraphrase. Some examples may illustrate this point.

The Latin Themistius asserts that the senses absorb, and thus do not relate passively to "species" and "rationes sensibilium"<sup>199</sup>. A similar observation applies to the intellect<sup>200</sup>. Elsewhere, species are assimilated to cognitive objects<sup>201</sup>. Furthermore, Themistius states, that intellectual species, characterized as "entia" on the same page<sup>202</sup>, are present in sensible ones<sup>203</sup>. Finally, it should be noticed that Themistius assumed, at an earlier stage, that the active intellect already possesses the species<sup>204</sup>. This means that the active intellect knows just in virtue of its own essence, and does not require any species *ab extra*.

Clearly, ambiguities in Themistius' texts are chiefly brought about by the translation of *eidos* as "species". *Eidos*, for Themistius, is a concept assimilating both the Platonic idea and the Aristotelian form; it does not subsume a mediating principle in sensation or intellectual knowledge, however. As far as intellectual knowledge is concerned, we may safely assume that Themistius

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<sup>199</sup> Themistius, *Paraphrasis eorum quae de anima Aristotelis*, ed. G. Verbeke, 131: "Quod enim non patiens proprie sit sensus a sensibilibus, neque alteratus suscipit ipsorum species, palam inde: non enim albus factus alba suscipit, neque calidus calida, neque dulcis dulcia, sed assumit quidem species sensibilium et rationes sine materia, sicut cera speciem aureae bullae sine auro, neque tamen materia facta scilicet sensus speciei, neque versus corporaliter, sed neque figuratus superficiei tenus."

<sup>200</sup> Cf. *Paraphrasis*, 198: "(...) sensus et intellectus, ut suscipiant species intelligibilium aut sensibilium."

<sup>201</sup> *Paraphrasis*, 250: "(...) propter hoc enim iste et quod maxime ens et quae maxime speciem intelligit (...)". Themistius, however, does not identify the *eidos/species* with *noema/conceptus*; cf. pp. 223 and 260.

<sup>202</sup> *Paraphrasis*, 258: "Bene autem dicimus omnia entia esse animam; species enim sunt entia et secundum speciem unumquodque est quod est". This definition may seem puzzling, but one has to recall that Themistius assimilates the Peripatetic "species" (*eidos*) to the Platonic idea.

<sup>203</sup> *Paraphrasis*, 258: "Quibus autem nulla res separata videtur praeter magnitudines sensibiles, his consequitur intellectuales species poni in speciebus sensibilibus".

<sup>204</sup> *Paraphrasis*, 227-28: "In intellectu quidem igitur qui potentia divisa sunt noemata, idest intellecta, in quo sunt et artes et scientiae, in eo autem qui secundum actum, magis autem in ipso actu, siquidem idem in ipso essentia cum actu, alio modo erit utique gravius divisibili et divinius, non transmutante ex hoc in hoc, neque componente, neque dividente, neque transitu utente ad intelligentias, sed omnes species habente in simul et omnes simul praemittente." On this innatism, see St.B. Martin, "The nature of the human intellect as it is expounded in Themistius' *Paraphrasis in libros Aristotelis De anima*", in *The Quest for the Absolute*, ed. F.J. Adelman, Boston-The Hague 1966, 1-21, on p. 9.

endorsed a thoroughly innatist view. In the case of sensation, Themistius may have allowed for some sort of reception of 'species'. The texts quoted above, however, suggest that he probably opted for another solution, closer to the one given by Plotinus: the senses—which are impassible when considered in themselves—receive the stimuli of sensibilia only in their organs.

I already mentioned Pomponazzi's claim that Themistius rejected the species doctrine in his commentary on *Metaphysics* XII. Pomponazzi, however, argued for this claim in a small treatise circulating in the form of a manuscript during the Renaissance, and only recently published by A. Poppi<sup>205</sup>. Pomponazzi is not isolated in this judgement, as is exemplified by a *Quaestio de speciebus intelligibilibus*, written by Marcantonio Zimara around the same time (before 1508), reprinted several times<sup>206</sup>, and progressively finding wider audiences in the course of the 16th century. Zimara refers to Themistius and maintains that Averroes, in his *De anima* commentary, criticized the doctrines of Theophrastus and Themistius also on account of the fact that they rejected the intelligible species<sup>207</sup>. Plainly, Zimara is projecting on Averroes his concern for a problem that, to say the least, the Commentator did not know in this specific form<sup>208</sup>. Zimara's reading of Averroes' *De anima* commentary, however, is a most likely source for the inclusion of the pair Theophrastus-Themistius as opponents of the species in the account of Spanish schoolmen.

<sup>205</sup> See the edition referred to above.

<sup>206</sup> Marcantonio Zimara, *Quaestio de speciebus intelligibilibus*, s.l.a.; Napoli 1554; Venezia 1561; printed also with Girelli's *Tractatus adversus quaestionem Marci Antonii Zimarae de speciebus intelligibilibus*, Napoli 1575; for discussion of the Zimara-Girelli polemics, see ch. VII.

<sup>207</sup> Zimara, *Quaestio*, ed. Napoli 1554, Biv: "Praeterea Averro: in commen.5. ex intento damnat Themistium & Theophrastum qui negaverunt species intelligibiles. Duo enim dicebant: in quibus discrepat Averroes ab ipsis. Primum fuit quod intellectus non recipit. Secundum vero fuit quod intellectus speculativus est aeternus." The Latin Averroes, however, does not use the expression "species intelligibilis"; cf. § 3.3 of this chapter. The combined critique of Theophrastus and Themistius, as allegedly inspired by Averroes, has medieval roots; cf. Albert the Great, *De anima*, III, tr. 2, c. 5. Incidentally, Averroes used Ishak Ibn Hunayn's translation of Themistius' paraphrase; cf. M.C. Lyons, *An Arabic Translation of Themistius' Commentary on Aristotle's De Anima*, Thetford 1973, 195f.

<sup>208</sup> Averroes is chiefly interested in a firm basis for his doctrine of the *intellectus speculativus*; cf. *Commentarium magnum in Aristotelis De anima libros*, ed. F.St. Crawford, Cambridge (Ma.) 1953, 390-391. In the next section Averroes' role in the species-debate will be analyzed.

Zimara was not the last Renaissance Aristotelian philosopher to associate the names of Theophrastus and Themistius with the species doctrine. Mocenigo holds that this doctrine is badly mistaken. In his *Paradoxa Theoremataque* (1559), he claims that an nativist view of species is the only true and legitimate interpretation of Aristotle on the modalities of knowledge acquisition. The authority of Theophrastus and Themistius is the ground for accepting the presence of “rationes rerum” in the human soul as a genuine Aristotelian thesis—which is *philosophice* true, though conflicting with the *veritas rei*<sup>209</sup>.

The idea of an ancient opposition to the intelligible species is a vivid example of the terminological and doctrinal stratification characterizing the debate on formal principles of intellectual cognition. An adequate understanding of medieval and Renaissance disputes requires, therefore, an analysis of the sedimentary layers of terms and notions on which they flourished.

### § 3. INTENTION AND ABSTRACTION IN ARABIC PHILOSOPHY

The reflection on the concept of intention, and the development of the idea that cognitive processes involve progressive abstraction through perceptual and cognitive faculties up to immaterial contents are the essential links, provided by Arabic philosophers, between Aristotle and Scholastic cognitive psychology. Indeed, their speculation, together with Augustine’s cognitive psychology, is the proximate systematic basis for the doctrine of sensible and intelligible species<sup>210</sup>.

The epistemological notion of “intentio”<sup>211</sup> is the Latin translation of the two expressions *ma‘qul* and *ma‘na*, which occur already

<sup>209</sup> Mocenigo, *Paradoxa, Theoremataque, Ex Aristotelis philosophia deprompta*, 80r-v; for discussion, cf. ch. VIII, § 1.3. Cf. also the view of Antonio Polo, discussed in ch. VIII, § 1.4.

<sup>210</sup> In ch. III, § 1, I examine Augustine’s view on the role of species in the knowledge of extra-mental reality, and its interpretation by later 13th-century theologians.

<sup>211</sup> The use of this notion in other fields such as ethics is not at issue here.



in the writings of Alfarabi<sup>212</sup>. Alfarabi's *ma'qul*—the Arabic translation of the Greek “noema”<sup>213</sup>—is a concept or thought in its relation to things that exist outside the soul, as well as to words<sup>214</sup>. Conceptually, Alfarabi's *ma'qul* is virtually the same as *ma'na*. *Ma'na* reaches back to the Hellenistic “*ennoia*”, based in turn on a Stoic-Neoplatonic mediation of the Aristotelian “*logos*”<sup>215</sup>. In the Latin version of Alfarabi's *De intellectu*, *ma'na*—translated as “*intentio*” or “*intencio*”—refers chiefly to (the intellectual understanding of) a cognitive content<sup>216</sup>. In medieval cognitive psychology, the Arabic “*intentio*” becomes a key explanatory notion.

Alkindi's notion of universal force and Alhazen's theory of vision provide the doctrinal link between Hellenistic cognitive psychology, later Arabic analyses of intention, and the medieval doctrine of cognitive species. For this crucial role, the relevant features of Alkindi's natural philosophy and Alhazen's views on visible forms and intentions are summarized in the first subsection below. The remainder of this section is devoted to the general psychological views and the theories of intention of Avicenna and Averroes.

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<sup>212</sup> Alfarabi, 870—950. “*Intentio*” was used to translate other Arabic words and expressions, often with unsatisfactory results; see K. Gyekye, “The terms «*prima intentio*» and «*secunda intentio*» in Arabic logic”, in *Speculum* 46(1971), 32-38.

<sup>213</sup> Alfarabi, *De interpretatione*, quoted in K. Gyekye, “The terms «*prima intentio*» and «*secunda intentio*»”, on p. 35, nt. 16. For the Latin translation of *noema* and its role in the subsequent species dispute, see also the next section.

<sup>214</sup> See Chr. Knudsen, “Intentions and impositions”, in *Cambridge History of Later Medieval Philosophy*, 479-495, on p. 479. This study is principally concerned with the status of intentions in a logical context.

<sup>215</sup> Cf. “*Intention*”, in *Historisches Wörterbuch der Philosophie*, eds. J. Ritter & K. Gründer, vol. IV, Basel-Stuttgart 1976, 469; for the background in Ancient philosophy and the use of intention in classical theology, see *idem*, 466-69. Recently, *ma'na* has been traced to the Stoic concept of *lekton*; cf. R. Sorabji, “From Aristotle to Brentano: the development of the concept of intentionality”, in *Aristotle and the Later Tradition*, cit., 227-259, on p. 237, note 58. However, as we have seen in § 1.4.2-3, in spite of an evident similarity between Stoic views on mental representation and medieval theories of intentional species, there is no clear evidence of effective influences.

<sup>216</sup> Alfarabi, *De intellectu et intellecto*, in E. Gilson, “Les sources gréco-arabes de l'augustinisme avicennisant”, in *Archives d'histoire doctrinale et littéraire du Moyen Age* 4(1930), 115-126, on p. 118, l.126-119, l.128: “*Igitur intencio de hoc quod ipsa est intelligens in effectu et intellectus in effectu et intellectum in effectu una et eadem intencio est et ad unam et eandem intencionem est*”; cf. 119, ll.139-144. The author of the article in the *Historisches Wörterbuch* referred to above suggests that *intencio* in Alfarabi denotes the reality of the known; cf. p. 469.

### 3.1. *Alkindi and Alhazen*

Alkindi's view of physical reality is marked by a strong syncretism of Neoplatonic and Stoic ideas<sup>217</sup>. The constituents of the natural world are, according to his *De quinque essentiis*<sup>218</sup>, bodies and the powers they emit<sup>219</sup>. In *De radiis stellatis*, these powers or activities are better characterized as rays which impress themselves upon other bodies<sup>220</sup>. Fire, colour and sound are only the most evident instances of the radiation of force<sup>221</sup>. This view, couched in terms originating from the Stoic and Neoplatonic traditions, recurs in Avicbron<sup>222</sup>, who argues that powers and rays emanate from each individual substance similarly to the way light emanates from the sun<sup>223</sup>. This influential view of a 'radiant' universe sets the terms for theories of intentions, forms or species: once emitted by the bodies, these are conceived of as propagating in the medium<sup>224</sup>.

Alhazen<sup>225</sup> is the first Arabic author to formulate a comprehensive and systematic alternative to Greek optical theories. In Alhazen's

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<sup>217</sup> Alkindi, ca. 801—866 Bagdad; generally considered "the first Arab philosopher"; played an important role in the elaboration and definitive formulation of Arabic philosophical and scientific terminology; wrote on first philosophy, logic, psychology and noetics.

<sup>218</sup> Published in A. Nagy, *Die philosophischen Abhandlungen des Ia'qub ben Ishaq al-Kindi*, Münster 1897, 28–40.

<sup>219</sup> For discussion, see G. Federici Vescovini, *Studi sulla prospettiva medievale*, Torino 1965, 38f.

<sup>220</sup> *De radiis*, f. 2v: "Manifestum est quod res huius mundi sive sit substantia sive accidens radios facit suo modo ad instar siderum." (unpublished work, quoted from Federici Vescovini, *Studi*, 46)

<sup>221</sup> As regards the theory of vision, Alkindi endorses the mixed theory of Plato and Galen, which presupposes that rays are emitted by the visible object as well as by the eye.

<sup>222</sup> Avicbron, 1021/22 Malaga—1058 Valence; for biographical information, see J. Schlanger, *La philosophie de Salomon ibn Gabirol. Étude d'un néoplatonisme*, Leiden 1968, 1–11.

<sup>223</sup> See *Fons vitae*, ed. Cl. Baemker, Münster 1895, book III, 52, p. 196 and D.C. Lindberg, "Alhazen's theory of vision and its reception in the West", *Isis* 58(1967), 321–341, on p. 336.

<sup>224</sup> See also L. Thorndyke, *A History of Magic and Experimental Science*, vol. I, New York 1921, 641–46.

<sup>225</sup> Alhazen, Bassora ca. 965—Cairo 1038/39; wrote on logic, ethics, politics, poetry, music, theology, but his writings on these subjects have not survived; his extant works belong to the fields in which he was reputed to have made his most important contributions: optics, astronomy and mathematics. His optics was known during the Middle Ages as *Perspectiva* or *De aspectibus*. F. Risner published the (adapted) Latin version of this work as *Opticae thesaurus*, Basileae 1572, reprint ed. D.C. Lindberg,

theory of vision, as Lindberg has pointed out, the various strands of ancient optical traditions converge<sup>226</sup>. He endorses Aristotle's description of light as actualization of the potential transparency of a medium by imposition of a form on the medium. However, in addition to arguing for an intromission theory of vision, he appeals also to a Neoplatonic view of the emanation of power, and to more properly atomistic constraints. Moreover, he espouses in its essential traits Galen's account of the anatomy of the eye and the physiology of sight, and exploits elements of the geometric tradition originated by Euclid and Ptolemy<sup>227</sup>.

Alhazen maintains that every visible object is seen because it emits its own light. Sight is produced by rays or powers, classified as "forms" and "intentions", issuing perpendicularly from all points of the perceived object, and entering the percipient eye<sup>228</sup>. A central feature of the Greek *eidola* theory is thus embodied in this conception. There are also significant differences, however, since rays are just powers producing qualitative changes in the percipient: rays are not corporeal replica<sup>229</sup>, lack the ontological 'thickness' of Epicurus' *eidola*, and thus seem individually more fit for to a geometrical treatment in terms of points and lines. Alhazen claims that the only forms or rays relevant to vision pass through the eye along

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New York 1972. The details of the medieval translation of the *Perspectiva* are unknown, but its attribution to Witelo can be certainly dismissed. It was probably translated between the late 12th and early 13th century. However, it was not sufficiently well-known in the first half of the 13th century to have any influence on the optical works of Robert Grosseteste.

<sup>226</sup> See D.C. Lindberg, "Introduction" to Alhazen, *Opticae thesaurus*, xiv. For a general discussion, see also V. Ronchi, "Sul contributo di Ibn-Al-Haitham alle teorie della visione e della luce", in *Actes du VIIe Congrès International d'Histoire des Sciences*, Paris 1953, 516-521; Lindberg, "Alhazen's theory of vision and its reception in the West"; A.I. Sabra, "Sensation and inference in Alhazen's theory of visual perception", in *Studies in Perception*, eds. P.K. Machamer and R.G. Turnbull, Columbus (Ohio) 1978, 160-185.

<sup>227</sup> A.M. Smith, "The psychology of visual perception in Ptolemy's *Optics*", in *Isis* 79 (1988), 189-207, reveals an organic relationship between Ptolemy's *Optics* and the *De aspectibus*. He argues (1) that Ptolemy's intent in composing the *Optics*, rather than a mere elaboration of Euclid's, was to accomplish the sort of sweeping optical synthesis that Alhazen formulated the better part of a millenium later, and (2) that Ptolemy's views at least played an instrumental part in the formation of Alhazen's optical synthesis.

<sup>228</sup> *Opticae thesaurus*, ed. cit., p. 7.

<sup>229</sup> Cf. Lindberg, "Alhazen's theory of vision and its reception in the West", 332-35. For Democritus' and Epicurus' concepts of *eidola*, see above § 1.1 and 1.4.1.

lines that are perpendicular to its surface. Thus, each point of intersection between one of these lines and the crystalline lens, identified as sensitive organ<sup>230</sup>, corresponds to a point on the viewed object. The crystalline lens transfers the forms to the vitreous humour, and from there, through the optical nerve, they are presented to the faculty of sense<sup>231</sup>.

The hypothesis that only unrefracted rays enter the eye enables Alhazen to establish a correspondence between the features of the object and the rays received by the eye<sup>232</sup>. Seeing an object, however, cannot be identified with a mere imprinting on the sensitive organ and faculty of a form emanating from the object. In most cases, a complex judgment based on the information received from the object is involved<sup>233</sup>—only light and colour being perceived by sense alone without the activation of capacities traditionally viewed as superior to sense<sup>234</sup>. Sense perception is thus not encapsulated, being relatively penetrable by intellectual knowledge. Conversely, some higher cognitive achievements are strongly sense-dependent: knowledge of universal form, for example, is a mere reconstruction of the imagination, made possible by repeated perceptions of individuals belonging to the same species<sup>235</sup>.

In the first book of his *Perspectiva*, Alhazen refers broadly to forms or rays which, entering the eye, make possible sight and visual experience<sup>236</sup>. Evidently, at the stage of a general physiological and geometrical analysis of vision, he feels no need for sharp terminological distinctions between the various perceptual qualities. Book I, in fact, deals mainly with the perception of light and colour, which are the primary visual objects and also the only ones whose

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<sup>230</sup> *Opticae thesaurus*, p. 8.

<sup>231</sup> *Opticae thesaurus*, p. 26.

<sup>232</sup> *Opticae thesaurus*, pp. 9-10.

<sup>233</sup> *Opticae thesaurus*, p. 31, where Alhazen distinguishes between vision “solo sensu”, “per cognitionem”, and “per ratione & distinctione”; on p. 30, in fact, Alhazen remarks that “comprehensio”, “comparatio”, “distinctio”, and “ratio” play a role in the act of vision. See also pp. 38-39. For discussion, see A.I. Sabra, “Sensation and inference in Alhazen’s theory of visual perception”, cit.

<sup>234</sup> *Opticae thesaurus*, p. 34.

<sup>235</sup> *Opticae thesaurus*, p. 38-39, and 70. See also p. 69: after repeated visual experiences of the relevant type a “notio” remains in our soul. For an assimilation of intelligible species and “notio”, in the sense of the Aristotelian *noema*, see § 4.2, *infra*, and, for instance, Agostino Nifo’s *De anima* commentary, discussed in ch. VI, § 3.3.

<sup>236</sup> Cf. *Opticae thesaurus*, pp. 7 and 12f.

perception does not require higher cognitive capabilities. In Book II, the term “intentio” is introduced to indicate more precisely those aspects of visible forms that we are able to perceive distinctly<sup>237</sup>. Indeed, the “intentio” is the representation of a sensible property captured by the perceptual apparatus. Since they represent partial aspects of the overall form of visual objects, intentions provide the basis for perceptual inferences.

This is the theoretical background for Alhazen’s views on the complementary roles of sensation and discursive reasoning in vision<sup>238</sup>. The human soul reflects on what it perceives, because only a restricted class of sensible qualities is accessible to a purely mechanical, unreflective sensation. Perception is largely penetrable by background knowledge, discursive reasoning and, in general, by previous experiences. Intentions play a special role: Alhazen regards them as some sort of ‘first matter’ upon which the human soul exercises its perceptual and cognitive capabilities. The intentions are messengers of the object (not identifiable with forms detached from matter), revealing the various aspects of its overall form, and thus providing the human soul with the objective content of (visual) perception and knowledge.

Alhazen had an extraordinary influence upon medieval optics. Indeed, the optical treatises of Roger Bacon, Witelo and John Peckam heavily lean upon his *Perspectiva*. Later authors, such as Dietrich of Freiberg, Nicole Oresme, Walter Burley and William Ockham, also refer to his work. At first glance, his role in the pre-history of the medieval doctrine of *intelligible* species seems only marginal. As I argue below, however, his actual influence can hardly be overemphasized.

The notions of impressed form and intention are rapidly assimilated in the medieval perspectivistic tradition. And optical theorists such as Roger Bacon and John Peckam develop Alhazen’s theory of emanated intentions into a doctrine of multiplied, *impressed* species<sup>239</sup>. Moreover, impressed species are viewed as closely related

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<sup>237</sup> See *Opticae thesaurus*, p. 34 for a list of 22 different types. For the distinction between form and intention, see also pp. 31, 63 and 67.

<sup>238</sup> *Opticae thesaurus*, pp. 30-32.

<sup>239</sup> See Lindberg, “Alhazen’s theory of vision and its reception in the West”, 330-341.

to intelligible species by the first opponents of Aquinas' theory. However, by amalgamating these two doctrinal traditions, the initial opponents of intelligible species set the stage for far-reaching misconceptions<sup>240</sup>, since the theory of intelligible species formulated by Thomas Aquinas does not presuppose any impression of intelligible species. And specific conceptual differences can be clearly isolated. In the first place, the impressed species of the optical tradition play a role in sense perception only, whereas the intelligible species represent to the intellect the intelligible essence of a material thing. Furthermore, the doctrine of impressed sensible species tacitly assumes, in Alhazen's optics, some sort of one-to-one correspondence between properties of the sensible object and the species impinging upon sense organs and perceptual faculties. The relationship between the intelligible species and the represented object has a different character, since the former is an abstract, mental representation of physical reality.

### 3.2. *Avicenna and Algazel*

With the term "intentio", Avicenna<sup>241</sup> generally indicates the reality of the perceptual and cognitive object. In his writings, "intentio" has a more extended reference than in Alfarabi, touching also the activities of the internal senses responsible for instinctive, albeit goal-directed, behaviour, and thus marking the beginning of the "apprehensio ab intus"<sup>242</sup>.

<sup>240</sup> See ch. III, in particular § 6.

<sup>241</sup> Avicenna, 980 Afshana (now: Uzbek)—1037 Hamadan (now: Iran); mastered knowledge of various sciences and practised medicine; wrote extensively on a wide variety of subjects; his major work is *Al-Shifa'*, an immense four-part encyclopedia, treating logic, physics, mathematics and metaphysics.

<sup>242</sup> See the famous example of the sheep that escapes the wolf in *Liber de anima*, ed. S. van Riet, 2 vols., Louvain-Leiden 1968 (books IV-V) and 1972 (books I-III), I.5, 85-86: "Sed virium ab intus apprehendentium, quaedam apprehendunt formas sensibiles, quaedam vero apprehendunt intentiones sensibilibus. Apprehendentium autem quaedam sunt quae apprehendunt et operantur simul, quaedam vero apprehendunt et non operantur, quaedam vero apprehendunt principaliter et quaedam secundario. Differentia autem inter apprehendere formam et apprehendere intentionem est haec: quod forma est illa quam apprehendit sensus interior et sensus exterior simul, sed sensus exterior primo apprehendit eam et postea reddit eam sensui interiori, sicut cum ovis apprehendit formam lupi, scilicet figuram eius et affectionem et colorem, sed sensus exterior ovis primo apprehendit eam et deinde sensus interior; intentio enim est id quod apprehendit anima de sensibili, quamvis non prius apprehendat illud sensus exterior, sicut ovis apprehendit intentionem quam habet de lupo, quae scilicet est

In Avicenna's *Liber de anima*, intention is indissolubly linked to the various degrees of abstraction involved in the perception of inner senses<sup>243</sup> and intellectual knowledge. The intention depends upon the external world, but is captured by the hierarchically organized cognitive faculties. Thus, knowledge amounts to a progressive assimilation of abstracted forms<sup>244</sup>. Relative to sense perception, Avicenna draws a distinction between sensible forms, that are objects attributed to the external senses, and the intention grasped only by the inner senses<sup>245</sup>.

The most perfect form of knowledge is achieved by grasping the (separate) form independent of the material world. And this type of knowledge is described in part V of the *Liber de anima* as "proprie formare intentiones universales intelligibiles"<sup>246</sup>. Notice that Avicenna is referring to intentions rather than to forms. Strict terminological coherence, however, is not to be found in the Latin Avicenna's treatment of the intellectual or intelligible realm. For example, in another chapter he speaks of the abstraction of intelligible forms, *intelligibilia* or separate forms<sup>247</sup>. These passages suffice to show that the Latin Avicenna does not draw sharp distinctions between *intentio-forma-intelligibile* in intellectual cognition. This attitude does not change with his first Western followers<sup>248</sup>.

The primary intellectual task of abstracting or dematerializing forms does not imply, according to Avicenna, that the overall goal

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quare debeat eum timere et fugere, quamvis non hoc apprehendat sensus ullo modo." Cf. *idem*, IV.1, 6f.

<sup>243</sup> For an analysis of the inner senses in Avicenna, see also E. Ruth Harvey, *The Inward Wits. Psychological Theory in the Middle Ages and the Renaissance*, London 1975, 39-46.

<sup>244</sup> Avicenna, *Liber de anima*, II.2, 114: "Loquamur nunc de virtutibus sensibilibus et apprehendentibus, sed loquamur de eis verba generalia, dicentes quia videtur quod apprehendere non sit nisi apprehendere formam apprehensi aliquo modorum; sed, si apprehendere est apprehendere rem materialem, tunc apprehendere est apprehendere formam alicuius abstractam a materia aliqua abstractione"; cf. pp. 114-120. Avicenna distinguishes between four levels of abstraction: sense, imagination, "aestimativa" and intellect. For discussion, see E. Gilson, "Sources", 53f; G. Verbeke, "Introduction", in *Liber de anima*, IV-V, 27\*-28\*; A.M. Goichon, *La philosophie d'Avicenne et son influence en Europe médiévale*, Paris 1951, 31-32.

<sup>245</sup> Cf. *Liber de anima*, IV, 85-86. See also the definition of intention in his *Liber de philosophia prima sive scientia divina*, ed. S. Van Riet, 2 vols., Leiden 1977-1980, vol. II, IX.3.

<sup>246</sup> *Liber de anima*, V.1, 76.

<sup>247</sup> *Liber de anima*, V.2, 88-89 and V.5, 144.

<sup>248</sup> Cf. ch. II, § 1.

of knowledge is that of grasping universal forms in sensible contents. The initial degrees of abstraction can be unproblematically attributed to the human soul and provide, as it were, an impulse needed for achieving the ultimate degree of abstraction—which is basically conceived of as the reception of a form originating from the separate agent intellect<sup>249</sup>. This view of intellectual abstraction is a distinguishing element of Avicenna's philosophy with respect to Alfarabi and, *a fortiori*, with respect to Aristotle and Alexander<sup>250</sup>. Avicenna's sensible images are merely a starting point for the process of genuine knowledge acquisition, which culminates in the reception of an emanated form. Thus, sensory images are not a source of cognitive contents, and any 'mechanical' acquisition of knowledge is to be excluded<sup>251</sup>.

The thoughts of the human soul merely prepare the reception of the 'abstracted' form<sup>252</sup>. Avicenna is walking on a tightrope when he tries to connect to the actual intelligibles the intelligible form contained potentially in the forms of the imagination:

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<sup>249</sup> *Liber de anima*, V.5; on the active intellect in Avicenna, see H.A. Davidson, "Alfarabi and Avicenna on the active intellect", in *Viator. Medieval and Renaissance Studies* 3(1972), 109-178.

<sup>250</sup> Alfarabi assigns the capability of abstracting to the potential intellect; see *De intellectu et intellecto*, cit., 117. On this aspect of Alfarabi's thought, cf. F. Dieterici, *Alfarabis philosophische Abhandlungen*, aus dem Arabischen übersetzt, Leiden 1892, xxxi; R. Hammui, "La filosofia di Alfarabi", in *Rivista di filosofia neoscolastica* 20(1928), 54-88, on p. 79; J. Finnegan, "Al-Farabi et le *Peri voû* d'Alexandre d'Aphrodise", in *Mélanges L. Massignon*, Paris 1957, 133-152, on p. 142. Alexander ascribed abstraction to the habitual intellect; see on this question, § 1.3. The influence of Alexander on Arabic thought begins with Avicenna's criticisms of his views. For Avicenna's doctrine of intellectual abstraction, see also G. Verbeke, "Introduction", in *Liber de anima*, I-III, 46\*f; Th. Mouhamma, "Théorie des intelligibles seconds chez Avicenne", in *Melto* 4(1968)1, 59-89, on p. 88; *A History of Muslim Philosophy*, ed. M.M. Sharif, vol. I, Wiesbaden 1963, 492f; F. Jabre, "Le sens de l'abstraction chez Avicenne", in *Mélanges de l'université Saint Joseph*, tome L, vol. 1, Beyrouth 1984, 281-311.

<sup>251</sup> Cf. *A History of Muslim Philosophy*, 495-96.

<sup>252</sup> *Liber de anima*, V.5, 127-28: "Cogitationes enim et considerationes motus sunt aptantes animam ad recipiendum emanationem, sicut termini medii praeparant ad recipiendum conclusionem necessario, quamvis illud fiat uno modo et hoc alio, sicut postea scies." For discussion, see G. Verbeke, "Introduction", in *idem*, 67\*; E. Gilson, "Sources", 64-65.



Imaginabiles vero sunt intelligibilia in potentia et fiunt intelligibilia in effectum, non ipsa eadem sed quae excipiuntur ex illis; immo sicut operatio quae apparet ex formis sensibilibus, mediante luce, non est ipsae formae sed aliud quod habet comparisonem ad illas, quod fit mediante luce in receptibili recte opposito, sic anima rationalis cum coniungitur formis aliquo modo coniunctionis, aptatur ut contingant in ea ex luce intelligentiae agentis formae nudae ab omni permixtione.<sup>253</sup>

The relation between rational soul and sensible forms may be compared to the relation that the latter bear to a mirror (“receptibili recto opposito” suggests this interpretation), which reflects images that do not affect its ontological status. It is this ‘distant reflection’ of sensible forms that prepares the human soul for the reception of intelligible forms. Also in his logic Avicenna presents the view that perceptual acts merely occasion the production of intelligible forms<sup>254</sup>. The latter can exist in the soul only “in effectum perfecte”, that is, only if the soul knows them effectively. Avicenna excludes, in fact, that intelligible forms can be stored into some sort of intellectual memory<sup>255</sup>.

Avicenna’s thought will exert a strong influence upon medieval and Renaissance analyses of the nature and function of mental representations<sup>256</sup>. In particular, Avicenna’s cognitive psychology introduces a relatively refined causal theory of perception, bearing on the species doctrine for its distinction between the real object as “sensibile” and the ways in which sensible objects might be present in the soul: as “forma” or as “intentio”<sup>257</sup>. The same terms are used in Avicenna’s analysis of intellectual knowledge; in that domain, however, he does not make a sharp distinction between *intelligibile*, *intelligible form* and *intelligible intention*. The reason for a partially

<sup>253</sup> *Liber de anima*, V.5, 128.

<sup>254</sup> Cf. F. Jabre, “Le sens de l’abstraction chez Avicenne”, in particular on pp. 302-306.

<sup>255</sup> *Liber de anima*, V.6, 147; this exclusion of intellectual memory will become a weapon in the hands of Renaissance opponents of the species doctrine.

<sup>256</sup> Cf. *A History of Muslim Philosophy*, cit., 505. For Avicenna’s influence on R. Bacon’s theory of the multiplication of species, cf. K. Tachau, *Vision and Certitude in the Age of Ockham. Optics, Epistemology and the Foundations of Semantics 1250-1345*, Leiden 1988, 13-14. Avicenna’s influence on other medieval and Renaissance authors, like Robert Grosseteste, Duns Scotus and Giacomo Zabarella, is well-known. Also Spanish authors are influenced by Avicenna; Suarez and John of St. Thomas, for instance, cite him regularly.

<sup>257</sup> *Liber de anima*, I.5, 85f.

overlapping use of these terms is that the intelligible content cannot be grasped in sense-dependent intentions. Therefore, there is no meaningful parallel between sensible and intellectual abstraction. Indeed, the agent intellect does not need mediating faculties or principles in order to be present to the human intellect. This immediate presence to the human (possible), intellect shows that no absolute distinction can be drawn between the intelligible and the way it is present in the human intellect as intention.

The term “intencio” reappears in the Latin translation of Algazel’s<sup>258</sup> *Maqâsid*. He states there that the intentions in imagination are transformed, after illumination, in “universalia abstracta”<sup>259</sup>. Algazel, however, devotes only side remarks to intention. Moreover, these remarks appear in the context of a neutral and detached report on Peripatetic philosophy, whose naturalism Algazel refuses to endorse<sup>260</sup>.

### 3.3. Averroes

A new and significant doctrinal development is due exclusively to Averroes<sup>261</sup>: intention becomes the bridge between the “cogitativa”

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<sup>258</sup> Algazel, 1058 (Tus, Persia)—1111; Arabic theologian and philosopher, professor at the Nizamiyyah College in Bagdad; he decided that ultimate truth could not be attained by intellectual means, and became a Sufi; his works became very influential in Europe through Latin and Hebrew translations, and especially his critical method towards hypotheses and assumptions was widely appreciated.

<sup>259</sup> Algazel, *Metaphysics*. A Mediaeval Translation, ed. J.T. Muckle, Toronto 1933, 170, 173, 184.

<sup>260</sup> On the misapprehension of Algazel’s work during the Middle Ages, cf. E. Gilson, “Les sources”, 76 and D. Salman, “Algazel et les Latins”, in *Archives d’histoire doctrinale et littéraire du Moyen Age* 10(1936), 103-127. In this *Metaphysica* (the Latin translation, ca. 1125-50, of *Maqâcid*), Algazel merely presents an objective exposé of Aristotelian philosophy, in order to have an adequate basis for in subsequent refutation in *Tahâfot*. Most medieval authors mistook his intendedly neutral summary for his own thought. Algazel’s exposition, in any case, expresses a tendency to ground Peripatetic abstraction on the illumination by the intellectual light; cf. p. 184: “Cum vero completa fuerit aptitudo anime, irradiat lumen intelligencie agentis super formas presentes in fantasia, et proveniunt ex eis in animam universalia abstracta, sic quod ex forma Petri apprehendit hominem universalem.” For Algazel’s perplexities on abstraction, see F. Jabre, “Le sens de l’abstraction chez Avicenne”, 307-310.

<sup>261</sup> Averroes, 1126 Cordova—1198 Marrakech; Spanish Muslim philosopher and the greatest Arabic commentator of Aristotle; studied medicine and then philosophy; wrote works on astronomy, philosophy and medicine; his works were partially known to the medieval West, and many more became available in the Renaissance; his ex-

and the separate intellect. Averroes rejects the emanation of intelligible forms as conceived by Avicenna; consequently, like medieval philosophers influenced by his views, he faces the problem of what the agent intellect exactly 'does' with sensory images or phantasms: how can an immaterial intellect interact with sensible representational devices, whose material character is indubitable because they are embedded in extended and physiological structures?

According to Averroes, as well as according to Avicenna before him, intentions are in some respect dependent on the things of which they are intentions, that is, they are the formal elements of things which move the senses:

Et potest aliquis dicere quod sensibilia non movent sensus illo modo quo existunt extra animam; movent enim sensus secundum quod sunt intentiones, cum in materia non sint intentiones in actu, sed in potentia.<sup>262</sup>

The concept of "intentio" is crucial for Averroes' interpretation of *De anima*, II.12<sup>263</sup>, whose Arabic-Latin translation is the following:

Et similiter unusquisque sensuum patitur ab habente colorem aut saporem aut sonum, sed hoc non secundum quod dicitur unusquisque eorum, sed secundum quod est in hac dispositione, et in intentione.<sup>264</sup>

The Aristotelian *kata logon* is translated as "in intentione": the senses can discriminate between and grasp material things, albeit not directly, that is, only through their somehow dematerialized intentions, which have no subsistence outside the soul. Averroes distinguishes the object of the senses, defined by Aristotle as form abstracted from matter, from that feature of sensible reality through which the senses are determined. This structural element cannot exist "extra animam" and cannot be identified with any material

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positions held a dominant position from the 13th through the 16th century. For more biographical information, see D. Urvoy, *Ibn Rushd (Averroes)*, London-N.Y. 1991.

<sup>262</sup> Averroes, *Commentarium in De anima*, ed. cit., 221; see also p. 237, ll. 3-4, 19-20: light in the medium is endowed with an "esse intentionale"; cf. 317. For discussion of this issue, see also: B. Bazán, "Intellectum speculativum. Averroes, Thomas Aquinas, and Siger of Brabant on the intelligible object", in *Journal of the History of Philosophy* 19(1981), 425-446, on pp. 425-31.

<sup>263</sup> See 424a20-24, discussed in § 1.3.

<sup>264</sup> In *De anima*, 316-17. An earlier part of this work is devoted to rejecting the perception doctrines of Plato and Democritus; cf. p. 26.

aspect of the cognitive object<sup>265</sup>, because “*intentio enim coloris alia est a colore*”<sup>266</sup>. Averroes’ intention is basically a psychological entity. For this reason, I believe, it cannot be identified with Aristotle’s sensible form without matter, although it has the same function as (the effects of) Aristotle’s dematerialized form, namely, to actualize the soul’s potential.

Averroes’ intention is also significantly different from Alhazen’s intention, and this fact is reflected in the uses made of the two notions in medieval philosophy: Alhazen’s idea of sensible messenger is a source of inspiration for the multiplication theory of (sensible) species as developed, in particular, by Roger Bacon, whereas Averroes’ intention as psychological entity reappears in Thomas’ doctrine of intelligible species<sup>267</sup>.

Like Avicenna, the Commentator of Cordova introduces an essential modification in the Peripatetic view of the object of sense perception. He provides a subtle interpretation of Aristotle’s remarks on sense perception as a process capturing characteristic *formal* features of the sensible world: the presence of matterless sensible form in sense organs and its transformation into a representational device (“*phantasma*”) are to be understood in the frame of a doctrine of hierarchically structured *intentions*, formal principles merely *representing* the sensible form at distinct levels of abstraction.

Also the Aristotelian comparison between senses and intellect is formulated by Averroes in terms of his theory of intentions:

Et ideo anima rationalis indiget considerare intentiones que sunt in virtute ymaginativa, sicut sensus indiget inspicere sensibilia.<sup>268</sup>

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<sup>265</sup> See in particular Averroes, *Compendium libri Aristotelis De sensu et sensato*, in Averroes, *Compendia librorum Aristotelis qui Parva Naturalia vocantur*, eds. A.L. Shields & H. Blumberg, Cambridge (Ma.) 1949, 30: “Et ideo dicitur quod isti sensus non comprehendunt intentiones sensibilibum nisi abstractas a materia: non enim apprehendunt intentionem coloris nisi abstractam a materia; et similiter olfactus et saporis et alii sensus sensibilibum aliorum. Et cum declaratum est hanc comprehensionem esse spiritualem, dicamus negantibus sensus comprehendere per medium quod intentiones quas anima comprehendit spiritualiter, quedam sunt universales, scilicet intelligibilia, et quedam particulares, scilicet sensibilia.” For discussion, see R. Sorabji, “From Aristotle to Brentano”, cit., 237.

<sup>266</sup> *In De anima*, 317.

<sup>267</sup> See, respectively, ch. II, § 2.3 and § 3.

<sup>268</sup> *In De anima*, 384, ll. 45-47; cf. *In De sensu*, 30, quoted above.

Intentions existing in the imagination are not actually intelligibile. For this reason, Averroes maintains the necessity of an active principle (the separate agent intellect) actualizing intentions, transposing them from one 'level' to another ("de ordine ad ordinem"), and thus enabling them to move the material intellect. More specifically, the agent intellect operates on phantasms by suitably modifying and presenting them to the material intellect, whose activity depends on sensory images<sup>269</sup>. When the sensible intention is actualized, it becomes *de facto* intelligible, and constitutes with the material intellect a more cohesive whole than the unity between form and matter<sup>270</sup>. Notice, however, that the qualitative difference between perceptual acts and cognitive contents Averroes is committed to excludes *ipso facto* any mechanical impression of intentions upon the possible intellect by the inner senses. This is a fundamental point, if one takes into account the fact that the medieval species doctrine was often charged of endorsing just this impression thesis.

In the domain of intellectual knowledge, Averroes does not distinguish between "intentio intellecta", representing the intelligible feature of the sensible object to the mind, and the mind's object as such. This approach is similar to that adopted by Avicenna, though the pertinent doctrinal contexts are significantly different. Both of them maintain that the intellect abstracts or actualizes, and simultaneously grasps the "intentiones universales"<sup>271</sup>. In this respect, the intelligible intention appears to be just another name for the thing's quidditative structure or essence:

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<sup>269</sup> *In De anima*, 401, 400-8. The transfer "de ordine ad ordinem" remains a central issue in species controversies, also for those who do not follow Averroes; cf., for instance, J. Duns Scotus, *Ordinatio*, liber I, dist. 3, q. 1, 216-17.

<sup>270</sup> *In De anima*, 404: "Et est etiam manifestum quod materia et forma copulantur adinvicem ita quod congregatum ex eis sit unicum, et maxime intellectus materialis et intentio intellecta in actu; quod enim componitur ex eis non est aliquod tertium aliud ab eis sicut est de aliis compositis ex materia et forma."

<sup>271</sup> *In De anima*, 419, ll. 59-64: "Et omnes iuvant se ad presentandum ymaginem rei sensibilis, ut aspiat eam virtus rationalis abstracta et extrahat intentionem universalem et postea recipiat eam, idest comprehendat eam." Cf. *In De sensu*, 31 for the different ways in which the soul grasps particular and universal intentions.

Idest, et quia hoc individuum est aliquid, et intentio per quam hoc individuum est ens, scilicet quidditas et forma eius, est aliud; v.g. quod hec aqua est aliud, et intentio, idest forma, per quam hec aqua est ens aliud est ab aqua.<sup>272</sup>

Indeed, at variance with the mechanisms of sense perception, the intention by which the intellect is actualized is just the "intellectum in actu", for any mediating position of the intention would lead to an infinite regress<sup>273</sup>. As a matter of fact, the "intentio intellecta" must ensure an *effective intellectual grasp* of the formal structure of sensible reality, which goes beyond a mere representation of it<sup>274</sup>. According to Averroes, however, the cognitive process does not involve only one operation, for he distinguishes between the abstraction of the "intellecta" and the cognitive grasp of them<sup>275</sup>. This distinction provides the basis for later characterizations of the preliminary conditions for the first operation of the human intellect. Aquinas, for example, claims that the "simplex apprehensio"—that is, the effective knowledge of the "quidditas"—requires the presence of a *species intelligibilis*. Furthermore, Averroes' distinction between sensible form and sensible intention in sense perception paves the way for similar solutions by the Scholastics. Aquinas systematically applies this type of distinction also within the intellec-

<sup>272</sup> *In De anima*, 421; unlike Averroes, the "quidditas" is viewed by Thomas and later authors as the proper object of intellectual knowledge, which comes to be known by way of species.

<sup>273</sup> *In De anima*, 435-36: "Ille enim sermo coegit nos ad alterum duorum: si autem intellectus fuerit idem cum intellecto in intellectu materiali, ut sint alie res que sunt extra animam intelligentes; si vero aliud, ut sit intellectum per intentionem in eo, quapropter indiget in essendo intellectum in intellectu, et hoc procedit in infinitum. Dissolutio igitur istius questionis est quoniam intentio per quam intellectus materialis fit intellectus in actu est quia est intellectum in actu; intentio vero per quam res que sunt extra animam sunt entia est quia sunt intellecte in potentia, et si essent in actu, tunc essent intelligentes"; cf. 469: "Sed intellecta sunt intentiones formarum ymaginationis abstracte a materia, (...)". See also Sextus Empiricus' criticisms of the Stoic cognitive impressions, and medieval criticisms of the species doctrine, such as those of Henry of Ghent and William Ockham.

<sup>274</sup> *In De anima*, 506: "Idest, et quia intentio intellecta eadem est cum re quam sensus comprehendit in sensato, necesse est ut qui nichil sentit nichil addiscat secundum cognitionem et distinctionem per intellectum."

<sup>275</sup> *In De anima*, 439, ll. 71-76: "Et fuit necesse attribuire has duas actiones anime in nobis, scilicet recipere intellectum et facere eum, quamvis agens et recipiens sint substantie eterne, propter hoc quia hee due actiones reducte sunt ad nostram voluntatem, scilicet abstrahere intellecta et intelligere ea." Cf. p. 495: "Et ista actio, scilicet creare intellecta et facere ea, est prior in nobis quam actio que est intelligere, sicut dicit Alexander." This priority is endorsed in different ways by Aquinas and Duns Scotus, whose species doctrines are strongly objected to by Ockham; cf. ch. IV, § 3.1.

tual realm, thereby arriving at his theory of intelligible species, the actual starting point of the extended philosophical controversy examined here.

In the disputes following Aquinas' death, several schoolmen appeal to Averroes' views for conflicting purposes: Scotus and Ockham, for example, invoke the authority of the Commentator to defend (Scotus) and to reject (Ockham) the species doctrine. The medieval followers of Averroes, including in particular John of Jandun and his school, systematically endorse the thesis that intelligible species are necessary. Their views on how species originate contribute significantly to philosophical investigations on mental representations. During the Italian Renaissance, however, the Averroist movement suffers from profound internal divisions, to the extent that Averroes' views on intention and on the speculative intellect are used in arguments for the necessity of mediating formal principles in intellectual knowledge as well as in arguments purporting to show the redundancy of species<sup>276</sup>.

Other aspects of Averroes' thought play a role in disputes between Renaissance Aristotelians on intelligible species: the theory of the speculative intellect, expounded in his commentary on the *Physics*, is a case in point. In book VII, he examines the view that the intellectual soul cannot undergo any alteration<sup>277</sup>. This claim, apparently conflicting with Aristotle's reflections on intellectual knowledge in *De anima* III.4-5, is accepted by Averroes with no further qualifications, and used in support of his theory of a unique and separate speculative intellect<sup>278</sup>. In the 14th century, this interpretation is rejected by Walter Burley in his *Physics* commentary: he argues that this Aristotelian passage is merely a report of Plato's opinion, and that Averroes' interpretation excludes *ipso facto* the necessity of intelligible species<sup>279</sup>. In turn, Burley's views give rise to lively discussions between various Renaissance Aristotelians

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<sup>276</sup> Cf., for instance, ch. VI, § 2-3 and ch. VII, § 1 and 4.

<sup>277</sup> Averroes, *In VIII Physicorum libros*, in *Aristotelis Opera*, vol. IV, 322rab: "Neque in parte distinguente de anima est alteratio. (...) Manifestum est igitur quòd alteratio est in sensibilibus, & in parte sensibili animae, in alijs autem non, nisi per accidens."

<sup>278</sup> *In VIII Physicorum libros*, 322va-323vb.

<sup>279</sup> Cf. ch. IV, § 4.2.

concerning the consistency of the species doctrine with Averroes' thought<sup>280</sup>.

### 3.4. *Concluding remark*

The evolution of the concept of "intentio" in Arabic philosophy, from Alhazen to Averroes, enables one to discern various ingredients of the doctrine of intentional species in Scholastic cognitive psychology. Alhazen's intentions, material, albeit non-corpuscular, messengers of specific features of the sensible object, reappear in the doctrine of (sensible) species, and particularly in the strand associated to perspectivistic optics<sup>281</sup>. In Avicenna, the feature that moves the senses is captured as "intentio" by the inner senses, which are in turn capable of some rudimentary form of abstraction. Also Averroes distinguishes between the presence of a perceptual content in the soul as "intentio", and the sensible object as such. Moreover, he characterizes mental acts as actualizations of the intelligible kernel of sensory representations.

Avicenna's and Averroes' doctrines of intention, which merely represents the sensible thing-to-be-known, provide rather sophisticated accounts of how a perceptual content is delivered to and becomes present in the soul. A more detailed theory of formal mediation in sense perception is undoubtedly one of the most important contributions of Arabic philosophers to the development of Peripatetic cognitive psychology. The distinction between content and representation applied to a sense-dependent intellectual cognition provides the basic framework for the doctrine of intelligible species.

## § 4. TRANSLATIONS AND TERMINOLOGICAL ISSUES

The previous sections were devoted to the doctrinal background and systematic basis of the species theory. The very term "species", however, was already used in works of classical Latin authors

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<sup>280</sup> See ch. VI, § 2 and ch. VII, § 1.

<sup>281</sup> Alhazen's doctrine of sense perception invalidates Sorabji's thesis that the Arabs contributed to de-materialising Aristotle's account of sense perception; see R. Sorabji, "From Aristotle to Brentano", 228.



known in the Middle Ages, and thus an impact of this tradition on the development of medieval philosophical terminology cannot be excluded *a priori*. Subsection 4.1 below provides, with an analysis of the meaning of the 'ancient' term "species", the basis for addressing this issue.

Agostino Nifo and other Renaissance philosophers<sup>282</sup> interpret the intelligible species as "notio" or *noema*. In 4.2, I attempt to isolate the motives for this interpretation. Finally, for a proper understanding of the intended meaning of the medieval *cognitive species*, it is also useful to consider the various translations of Aristotle's *De anima*, and William of Moerbeke's translations of Neoplatonic authors such as Themistius, Philoponus and Proclus<sup>283</sup>. I shall do so in subsection 4.3. Although a sharp distinction between terminological questions and doctrinal aspects of the species controversy is not possible, some indication on the scope of this subsection can be given. In discussing these Neoplatonic authors here, I am not suggesting that they are precursors of the doctrine of intelligible species. However, the Neoplatonic heritage of terms and concepts vigorously contributed to shaping the species debate, starting from the 13th century, and thus one has to touch upon the Scholastic, that is, Latin reception of some terms and concepts used by Neoplatonic classical authors, and their transformations within new categorial frameworks.

#### 4.1. "*Species intelligibilis*" and *idea*

The ancient concept of an "intelligible species" originates with Cicero's translation of the Platonic *idéa* with "species" or "for-

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<sup>282</sup> See ch. VI, § 3, and VII, § 3.2.

<sup>283</sup> For a survey of the various meanings of "species" in medieval philosophy and theology, see P. Michaud-Quantin, "Les champs sémantiques de *species*. Tradition latine et traduction du Grec", in idem, *Études sur le vocabulaire philosophique du Moyen Âge*, Roma 1970, 113-150. Michaud-Quantin does not consider, however, any classical author, nor Moerbeke's translations.

ma"<sup>284</sup>. Seneca introduces the Latin "idea"<sup>285</sup>, but later writers, such as Apuleius and Augustine, continue to use "forma" or "species" for the same Platonic term<sup>286</sup>.

An important development towards a psychological understanding of the term "species" is the discussion on the notion of idea from Plato to Plotinus. The ancient Stoics interpreted Platonic ideas as mere representations of our thought<sup>287</sup>. Similarly, ideas are human thoughts for Cicero, but he considers them to be innate rules of conduct, shared by all individuals<sup>288</sup>. Philo and other representatives of middle-Platonism, possibly in a critical reaction to the Stoic interpretation of ideas as human thoughts *tout court*<sup>289</sup>,

<sup>284</sup> *Academica*, in Cicero, *De natura deorum. Academica*, Cambridge (Ma.)-London 1979 (first edition 1933), 440: "Hanc illi idéan appellant, iam a Platone ita nominatum, nos recte speciem possumus dicere"; cf. p. 442. See also *Orator*, with an English translation by E.W. Sutton, 2 vols., Cambridge (Ma.)-London 1948, 8. Cicero is still mentioned for this translation by Pedro Hurtado de Mendoza, *Disputationes de Universa philosophia*, cit., 792.

<sup>285</sup> See *Epistulae*, 58 and 65; cf. G. Spinoso, "Idea e idos nella tradizione latina medievale", in *Idea. VI Colloquio Internazionale del Lessico Intellettuale Europeo*, eds. M. Fattori and M.L. Bianchi, Roma 1990, 43-61, on pp. 43-44.

<sup>286</sup> Cf. Apuleius, *De Platone et eius dogmate*, in *Opusculi philosophiques et Fragments*, ed. J. Beaujeu, Paris 1973, 63: "Initia rerum esse tria arbitrat Platō: deum et materiam inabsolutam, informem, nulla specie nec qualitatis significatione distinctam, rerumque formas, quas idéas idem vocat"; cf. also the accompanying "Commentaire", in *idem*, 254-5. See *De diversis quaestionibus octoginta tribus*, ed. A. Mutzenbecher, *Opera* pars XIII, 3, Turnhout 1975, on p. 70: "Ideas igitur latine possumus vel formas vel species dicere, ut verbum e verbo transferre videamus." This passage will be quoted by James of Viterbo and Dietrich of Freiberg; see, respectively James' *Disputatio prima de quolibet*, ed. E. Ypma, Romae 1968, q. 13, p. 184 (see also ch. III, § 4.5), and Dietrich's *De visione beatifica*, in *Schriften zur Intellekttheorie*, ed. B. Mojsisch, Hamburg 1977, pp. 37-38. Also Boethius translates idéa with "species" or "forma"; see G. Spinoso, "Idea e idos nella tradizione latina medievale", 56-57. For discussion of the Patristic "idea", and its equivalents "forma", "species" and "ratio", see J. Pépin, "'Idéa/idea dans la Patristique grecque et latine. Un dossier", in *Idea*, cit., 13-42, on pp. 22f.

<sup>287</sup> Cf. *Die Fragmente zur Dialektik der Stoiker*, cit., n°s 315-321.

<sup>288</sup> See, e.g., Cicero, *Orator*, 7-10. For discussion, see P.O. Kristeller, *Die Ideen als Gedanken der menschlichen und göttlichen Vernunft*, Heidelberg 1989, p. 9, who identifies Panetius as the likely source of Cicero; and J. Pépin, "'Idéa/idea dans la Patristique grecque et latine. Un dossier", 34.

<sup>289</sup> In *Die Fragmente zur Dialektik der Stoiker*, n° 318 and n° 319 this interpretation is challenged by Plotinus *Enneades* VI.6.12 and by Proclus, *In Euclidis Elementa*, 89, II.15-20. On this discussion, see also G. Reale, *Storia della Filosofia Antica*, IV. *Le scuole dell'età imperiale*, Milano 1987 (first edition 1978), 336. Plato argued, already in *Parmenides*, that the identification of ideas with thoughts is absurd; cf. R.E. Allen, "Ideas and thoughts: Parmenides 132b-c", in *Ancient Philosophy* (1980), 29-38.

characterize ideas as the thoughts of God<sup>290</sup>. This doctrine, also present in Augustine<sup>291</sup>, reappears in Macrobius: in his commentary on Cicero's *Somnium* (probably written between the end of the 4th and the beginning of the 5th century), he states that God's mind contains the "rerum species", which may be called ideas<sup>292</sup>. A decisive step is undertaken by Calcidius: in his commentary on Plato's *Timaeus* (shortly after 400), he uses the very expression "species intellegibilis", and identifies its meaning with that of the Platonic "idea"<sup>293</sup>. The expression "intellegibilis species" is also

<sup>290</sup> Philo, *De officio mundi*, 16-25; Albinus, *Epitome*, ed. C.F. Hermann, 163; ps. Plutarchus [=Aetius], *Placita*, I.10.3, quoted in H. Diels, *Doxographi graeci*, Berlin-Leipzig 1929<sup>3</sup>, 309, 3. Cf. also a well-known author in the Middle Ages, such as Seneca, *Epistola* 65, 7: "haec exemplaria rerum omnium deus intra se habet numerosque universorum, quae agenda sunt, et modos mente complexus est: plenus his figuris est, quas Plato ideas appellat, immortales, immutabiles, infatigabiles." For discussion, see: A.N.M. Rich, "The Platonic ideas as the thoughts of God", in *Mnemosyne* 7(1954), 123-133; H.A. Wolfson, "Extradeical and intradeical interpretation of the Platonic ideas", in *Religious Philosophy. A Group of Essays*, Cambridge (Ma.) 1961, 27-68, on pp. 29f; L.M. de Rijk, "Quaestio de ideis. Some notes on an important chapter of Platonism", in *Kephalaion. Studies in Greek Philosophy and its Continuation*, eds. J. Mansfeld and L.M. de Rijk, Assen 1975, 204-213, on pp. 204f. See also C.J. de Vogel, "À la recherche des étapes précises entre Platon et le néoplatonisme", in *Mnemosyne* 7(1954), 111-122, on p. 120, and A.H. Armstrong, "The background of the doctrine that the intelligibles are not outside the intellect", in *Les sources de Plotin*, Genève 1960, 391-425, on pp. 399-404. P.O. Kristeller, *Die Ideen als Gedanken der menschlichen und göttlichen Vernunft*, argues on p. 13f that the doctrine of ideas as divine thoughts arises with Antiochus of Ascalon.

<sup>291</sup> Cf. L.M. de Rijk, "Quaestio de ideis. Some notes on an important chapter of Platonism", 208. For other authors, see J. Pépin, "*Idéa/idea* dans la Patristique grecque et latine. Un dossier", 28-36. For Augustine's role in the medieval species controversy, see ch. III, § 1.

<sup>292</sup> Macrobius, *Commentarii in Somnium Scipionis*, ed. I. Willis, Leipzig 1970, 2nd ed., 22: "aut enim deus summus est aut mens ex eo nata in qua rerum species continentur aut mundi anima quae animarum omnium fons est, (...)"; and 6: "(...) vel ad mentem, quem Graeci *noûn* appellant, originales rerum species, quae *idéai* dictae sunt, continentem, ex summo natam et profectam deo". This definition will be frequently referred to during the Middle Ages; cf., among others, "Henry of Harclay's Questions on the divine ideas", ed. A. Maurer, in *Mediaeval Studies* 23(1961), 163-193, on pp. 174 and 181.

<sup>293</sup> Cf. Plato Latinus, *Timaeus a Calcidio translatus commentarioque instructus*, ed. J.H. Waszink, Londinii & Leidae 1975, 276: "Quippe primum elementum universae rei silva est informis ac sine qualitate quam, ut sit mundus, format intellegibilis species; ex quibus, silva videlicet et specie, ignis purus et intellegibilis ceteraeque sinceræ substantiae quattuor, e quibus demum hae materiae sensiles, ignae aquatiles terrenaes et aereae"; cf. 333-4 on the identification of "idea" and "species intellegibilis", and 335, 339; cf. also p. 340: "Exsomnia pervigilemque naturam nuncupat intellegibile atque incorporeum genus, quod semper idem est principaliterque subsistit sine ortu sine occasu, minime mutabile, nullam habens cum sensilibus societatem, pura

found in Augustine; its connotation there is clearly ethical, however<sup>294</sup>. Conceived by God's mind, the "intelligible" species is regarded by Calcidius as the cognitive object *par excellence*<sup>295</sup>. Since they are produced by a mind, albeit a very special one, ideas or "intelligible" species can be characterized as *opera intellectus*<sup>296</sup>. The species-ideas bear a significant relationship to the medieval intelligible species, at least insofar as the latter are also produced by the human mind, and play an indispensable role in knowledge of the external world. "Idea" and (separate) "species" are used as interchangeable terms by many medieval authors<sup>297</sup>. The intelligible species is assimilated to or identified with idea as cognitive content by various Renaissance authors<sup>298</sup>. Most modern philosophers reject

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mente percipibile, deum videlicet et cogitationes eius, intelligibiles atque incorporeas species."

<sup>294</sup> See *De civitate Dei*, *Opera* pars XIV, 1-2, Turnhout 1955, XI.27, p. 347: "Habemus enim alium interioris hominis sensum isto longe praestantiorum, quo iusta et iniusta sentimus, iusta per intelligibilem speciem, iniusta per eius privationem."

<sup>295</sup> Calcidius, *Commentarium*, 278: "Tunc quippe res omnis in duo fuerat initia divisa, quorum alterum intelligibilis erat species, quam mundi opifex deus mente concepit, eamque ideam cognominavit Plato, alterum imago eius, quae natura est corporis"; see also p. 304: "Et intelligibilia quidem sunt, quae intellectu comprehenduntur rationabili indagine (...)". Analogously, the Renaissance translation of Alexander of Aphrodisias' *De anima* by Gerolamo Donato (Venice 1514) describes the highest intelligible in Alexander as "species intelligibilis", cf. f. XVIr (= ed. Bruns, 88,24-89,1); this superior intelligible is identified with the agent intellect by Alexander. See also *De anima*, interpret Hieronymo Donato, XVIv (=Bruns, 91), for the possible mind's receptivity to intelligible species. Marsilio Ficino assimilates "species intelligibiles" to Platonic ideas, present in our soul as "formulae innatae"; cf. ch. VI, § 1.3.

<sup>296</sup> Calcidius, *Commentarium*, 306.

<sup>297</sup> Thomas Aquinas, *In Aristotelis librum De anima commentarium*, III, lectio VIII, 705: "Et quia Plato ponebat quidditates rerum esse separatas a singularibus, quas dicebat ideas, vel species"; cf. lectio XII, 784 on the "species separatas"; see also *De substantiis separatis*, c. IV, 61 on separate "species intelligibiles"; cf. R. Busa, "Idea negli scritti di Tommaso d'Aquino", in *Idea*, cit., 63-87. See also John Versor, *Quaestiones super tres libros De anima Aristotelis*, Cracovie 1514, 143v. For other references and discussion, see G. Spinoza, "Idea e idos nella tradizione latina medievale", 58f and J. Hamesse, "Idea chez les auteurs philosophiques des 12e et 13e siècle", in *Idea*, cit., 99-135. I do not examine here the classical sources of the medieval theory of ideas; for a first orientation, see the studies of Spinoza and Hamesse, as well as S. Gersch, *Middle Platonism and Neoplatonism. The Latin Tradition*, 2 vols., Notre Dame 1986, vol. I, 181-195; M.J.F.M. Hoenen, *Marsilius van Inghen (†1396) over het goddelijke weten. Zijn plaats in de ontwikkeling van de opvattingen over het goddelijke weten ca. 1255-1396*, Nijmegen 1989, 69-70.

<sup>298</sup> See Ficino, Pico, Porzio, Bruno, Polus, Scipio Agnello and others, discussed in ch.'s VI, § 1.2-3, VII, § 4.2, VIII, § 1.3 and 3.3-4. Gerolamo Cardano still uses "species" as a general equivalent for the Platonic idea; cf. *De subtilitate libri XXI*, Basileae 1554, 405.

the notion of intelligible species, preferring the more common notion of *idea*<sup>299</sup>.

A final remark on the qualifying term “intelligibilis” in the expression “species intelligibilis”. In translating the Greek *noeton*, Boethius distinguishes between “intellectibile” and “intelligibile”. The former term stands for sense-independent mental entities, such as God and the immaterial soul, which can be grasped by the intellect only. The latter one concerns the mind’s cognitive grasp of the “intelligible” aspects of the celestial and sublunar reality, that is, of “intellectibles” inasmuch as present in the corporeal world<sup>300</sup>. In the 12th century, this distinction recurs in Hugh of Saint Victor’s *Didascalicon*. According to Hugh, the intelligible kernel of the world is known by the intellect with the aid of the senses<sup>301</sup>. Thus the species, qua *intelligibile*, has the connotation of relating the mind to sensible reality as a possible cognitive object, which is to be grasped with the aid of perceptual capabilities.

#### 4.2. *Species as noema*

During the Renaissance, the intelligible species is sometimes identified with the Greek *noema*, that is, with thought or notion<sup>302</sup>. In Plato’s writings, the word *noema* occurs only rarely<sup>303</sup>. And indeed, this Renaissance usage can be traced back to Aristotle’s *De anima*, where the term denotes (primary) thought, that is, the result of ‘simple’ intellectual activity<sup>304</sup>. Roughly speaking, *noema* is the mental counterpart of *aistema* or perceptual state. The object of thought (*noeton*) is the immediate cause of intellectual activity,

<sup>299</sup> See ch. XI, in vol II (forthcoming).

<sup>300</sup> See Boethius, *In Isagogen Porphyrii commenta*, I.3, ed. S. Brandt, Vindobonae-Lipsiae 1906, pp. 8-9. See, for discussion, M.D. Chenu, “Imaginatio. Note de lexicographie philosophique médiévale”, in *Miscellanea Giovanni Mercati*, vol. II, Città del Vaticano 1946, 593-602.

<sup>301</sup> *Didascalicon*, I. II, c. 3: “Intelligibile autem quod ipsum quidem solo percipitur intellectu, sed non solo intellectu percipit, quia imaginationem vel sensum habet, quo ea quae sensibus subiacent comprehendit.”

<sup>302</sup> See, in particular, Nifo, in ch. VI, § 3, and later authors, discussed in ch. VII, § 3.2 and VIII, § 2.3. However, see the earlier John Hulshout of Malinas, *Tractatus de homine*, A. Pattin (ed.), in *Tijdschrift voor Filosofie* 39(1977), 435-521, on p. 454; for discussion, see ch. V, § 2.4.

<sup>303</sup> Cf. *Statesman*, 260d; *Symposium*, 197e; *Meno* 95e. For discussion: R.E. Allen, “Ideas as thoughts: *Parmenides* 132b-c”, in *Ancient Philosophy* (1980), 29-38.

<sup>304</sup> *De anima*, 432a10-14.

whose result is a *noema*, that is, a mental content. It was argued above that the precise meaning of *noema* as (primary) thought in *De anima* must be derived from Aristotle's distinction between (individual) thoughts and discursive reasoning<sup>305</sup>. Aristotle regards thoughts as items subject to combinatorial processes, and does not assume the possibility of contemplating isolated concepts. Nevertheless, propositional thinking requires the existence of thoughts regarding incomposite objects, whose certainty depends on some sort of direct acquaintance or contact (*thighein*)<sup>306</sup>. It is very likely that in order to reconcile the objectivity of mental content with the plurality of individual thinking subjects, Aristotle viewed, as suggested by Wedin, the *noemata* resulting from an object perceived by more than one subject as formally identical but numerically different<sup>307</sup>. This point is relevant for some developments of the species controversy: as we shall see in chapter VI, on the basis of a paradox concerning the incompatibility between the plurality of individual thinking subjects and the intelligible species as formal principle, Agostino Nifo gave an argument against the species doctrine in its medieval guise, whose upshot is that *noema* or "notio" is the only acceptable interpretation for intelligible species<sup>308</sup>.

There is a final, minor remark on the use of *noema* in other Greek philosophers known to medieval authors: in his translations of Themistius' paraphrase of *De anima*, Philoponus' *De anima*-commentary, and Proclus' *Parmenides*-commentary, William of Moerbeke translated *noema* with "conceptus" or simply with "noema"<sup>309</sup>.

#### 4.3. Moerbeke's translations of Neoplatonic authors

Most likely, the controversy about intelligible species would have taken a different course, if the Aristotelian *eidos* in *De anima*, III

<sup>305</sup> Cf. also *De interpretatione*, I, 16a10-19.

<sup>306</sup> The role of primary thoughts is to be understood on the basis of two fundamental passages: *De anima*, 430a26-31 and *Metaphysics* IX.10, 1051b24-25; see § 1.3.

<sup>307</sup> Wedin, *Mind and Imagination in Aristotle*, cit., 170.

<sup>308</sup> For the Hellenistic interpretation of *noema* and related terms such as *ennoema* and *ennoia*, see § 1.4 above, and Cicero, *Topica*, VII.31; idem, *De natura deorum*, I.43-44; ps-Plutarchus, *Placita*, IV.11. See also Lipsius, *Manuductio ad Stoicam philosophiam*, cit, 706f.

<sup>309</sup> For discussion of this translations, see below.

had not been translated with “species”, in addition to the other rendering “forma”<sup>310</sup>. This translation significantly affects the philosophical perspective, because the species has instrumental and representational connotations, whereas the Aristotelian form stands for the defining characteristics of a thing.

The Arabic-Latin version of *De anima* by Michael Scotus (ca. 1220), published for example in the translation of Averroes’ commentary, offers “forma” for *eidos* in the crucial sections of *De anima*, III, concerning the intellectual soul as *topos* or *eidos eidon* (recurring themes during the next few centuries)<sup>311</sup>. “Species” for *eidos* is the rendering of the *Vetus Translatio* (by James of Venice, around the middle of the 12th century) in the same crucial sections<sup>312</sup>—an example followed by William of Moerbeke, whose translation set the terms for the subsequent species controversies. Though the *eidos*-species translation is no longer universally accepted by 15th- and 16th-century translators of Aristotle, it persists during the Renaissance, as, for example, in contributions to philosophical discussions, as well as in the Latin version of Alexander of Aphrodisias’ *De anima*<sup>313</sup>.

<sup>310</sup> For a detailed study of the *De anima* translations, see L. Minio-Paluello, “Le texte du *De anima* d’Aristote: la tradition latine avant 1500”, in idem, *Opuscula. The Latin Aristotle*, Amsterdam 1972, 250-276; R.A. Gauthier, “Préface”, in Thomas de Aquino, *Sentencia libri de anima*, 49\* f; W. Fauser, *Der Kommentar des Radulphus Brito zu Buch III De anima*, 31f; see also P.-M. de Contenson, “Avicennisme latin et vision de Dieu au début du XIIIe siècle”, in *Archives d’histoire doctrinale et littéraire du Moyen Age* 34(1959), 29-97, on p. 41f. F.E. Cranz, “The Renaissance reading of the *De anima*”, in *Platon et Aristote à la Renaissance*, Paris 1976, 359-376, is convinced that this translation brought about a dualism between senses and intellect on the one hand and things on the other hand, which is alien to Aristotle’s thought; cf. pp. 366-371.

<sup>311</sup> Cf. Averroes, *In De anima*, 503: “Et non sunt ista; lapis enim non existit in anima, sed forma. Et ideo anima est quasi manus; manus enim est instrumentum instrumentis, et intellectus forma formis, (...)” (= 431b-32a).

<sup>312</sup> Cf. Albert the Great, *De anima*, ed. C. Stroick, Münster 1968 (= *Opera*, VII.1), 223; this translation is also printed in Anonymus (Magister artium, ca. 1245-1250), *Lectura in librum de anima*, ed. R.A. Gauthier, Grottaferrata 1985.

<sup>313</sup> *De anima*, interprete Hieronymo Donato, Venetiis 1514, XVr and XVv, where the intelligible species is considered as a cognitive object, and used as an equivalent for the *species intellecta*. For the *De anima* translations during the Renaissance, see Part II, introduction, in Vol. II (forthcoming).

William of Moerbeke substantively contributed to developing the terminology of Scholastic philosophy, notably with his translations of various Neoplatonic authors<sup>314</sup>. In his translation of Themistius' *De anima* paraphrase, the Flemish Dominican friar translates *eidōs* with "species", which refers to a notion further subdivided into sensible and intellectual or intelligible species<sup>315</sup>. The Themistian species, however, indicates the object of the intellect or the intelligible *in se*<sup>316</sup>, although the nuances in Themistius' discourse suggest the possibility of distinguishing between form and species<sup>317</sup>. The Latin Themistius, for instance, speaks of sensible species in the sense organ, and describes material species as only potentially intelligible, without using the term "form" in this context<sup>318</sup>. Moreover, the soul is conceived as *species specierum*<sup>319</sup>, just as in William's *De anima* version, and the intellectual species can be found in sensible ones<sup>320</sup>. In his translation of Philoponus, *Commentum super capitulum de intellectu in libro tertio Aristotelis de anima*, William adopts similar criteria<sup>321</sup>.

<sup>314</sup> On these translations, see M. Grabmann, "Die Proklusübersetzungen des Wilhelm von Moerbeke und ihre Verwertung in der lateinischen Literatur des Mittelalters", in idem, *Mittelalterliches Geistesleben*, vol. II, München 1936, 413-423; R. Klibansky, "The continuity of the Platonic tradition during the Middle Ages and the Renaissance", in *Medieval and Renaissance Studies* 1(1943), 281-332; G. Verbeke's introductions to the Latin editions of Themistius and Philoponus, and his *Het wetenschappelijk profiel van Willem van Moerbeke*, Amsterdam 1975; F. Romano, "Proclo e le fonti platoniche del pensiero medievale", in idem, *Studi e ricerche sul neoplatonismo*, Napoli 1983, 75-88.

<sup>315</sup> Themistius, *Paraphrasis de anima*, 198; William finished the translation of this work in 1267, cf. G. Verbeke, "Introduction", xv. See also *supra*, § 2, for the ambiguities of Themistius' Latin terminology.

<sup>316</sup> Cf. the observations in § 2. See also *Paraphrasis de anima*, p. 21, where Themistius assimilates idea and species: "His autem omnibus superior est qui circa eas quae vere sunt species negotiatur, quae omnino separatae sunt a materia et ratione et hypostasi, sicut primus philosophus"; on p. 250 the species is identified with the cognitive object.

<sup>317</sup> See, e.g., *Paraphrasis de anima*, p. 215: "Necessarium ergo talis intellectus non esse naturam propriam nullam neque formam nisi hanc, quod possibilis est comprehendere alienas naturas et formas, et nullam habere speciem determinatam, quoniam comprehendere omnia natus est."

<sup>318</sup> *Paraphrasis de anima*, 132 and 223.

<sup>319</sup> *Paraphrasis de anima*, 257-258. For a similar characterization of the intellect, see Albert the Great (ch. II, § 2.1).

<sup>320</sup> *Paraphrasis de anima*, 258. See also above, § 2.

<sup>321</sup> Jean Philopon, *Commentaire sur le De anima d'Aristote*, ed. G. Verbeke, Louvain-Paris, 1966, 8-9: the intellect does not contain species; p. 13: the intellect is *species specierum*; on p. 14 the soul is defined as *locus specierum*; on p. 76 the species is characterized as the object of knowledge. Cf. also pp. 109-110, commenting



The question of how much the Proclus-translations by William of Moerbeke influenced the medieval species-controversy has not been thoroughly investigated<sup>322</sup>. We may safely assume, however, that their role was not negligible. For example, the thesis of the *Liber de causis* that every intelligence must be conceived of as *plena formis* will be quoted in species debates until the Spanish Scholasticism<sup>323</sup>. On more general grounds, William's Proclean translations could be read as suggesting a theoretical distinction between species and ideas without identifying the species with the intelligible or with the idea—unlike most Latin authors and other translations of Greek classical writers do<sup>324</sup>. In Moerbeke's version of *De providentia et fato*, for example, we read that knowledge ascends by way of species<sup>325</sup>; in *De malorum subsistentia*, the species is causally responsible for every act of knowledge<sup>326</sup>. Whatever is their relation to Proclus' ideas on psychology or epistemology, these Latin renderings probably affected the reception of Thomas' doctrine of the intelligible species as formal principle of knowledge

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431b16-17: "Cum dixisset quae ex abstractione et mathematica intellectus separans a materia, ut entes in se ipsis species separatas a materia ita intelligit, adiunxit quod saepe dixit, quod enim intellectus qui secundum actum sit species sine materia. Ut enim qui secundum actum sensus erat sensibiles species, et ut secundum actum scientia res, ita et qui secundum actum intellectus species <intelligibiles> est et quae sine materia et quae ex abstractione." Philoponus' epistemology is, however, essentially based on innatism; cf. p. 83: the human soul possesses "rationes omnium". Only *sensibilia* are known with the help of the senses, whereas the *species ipsae* are known in virtue of *rationes* present in the soul; cf. p. 24: "Quoniam igitur sensibilia non sine sensu intelligit intellectus, propter hoc, quando sensibilia intelligit, ait ipsum assimilari incurvatae rectae. Quando tamen de ipsis speciebus intendit, non utens sensu, sed eas quae in ipso rationes movens"; see the distinction between "secundum se et natura intelligibilia" and "facta intelligibilia, ut materiales species", on p. 118, 25-28. Cf. also p. 23, 50-52, and p. 61, 85-62, 92, and 67; the impact of the senses on intellectual knowledge is viewed as only a 'provocation', see p. 116.

<sup>322</sup> I am not offering here an overall analysis of Proclus' epistemological thought; for valuable expositions, see W. Beierwaltes, *Proklos. Grundzüge seiner Metaphysik*, Frankfurt am Main 1965, III. Teil; idem, "Das Problem der Erkenntnis bei Proklos", in *De Jamblique à Proclus*, Genève 1975, 153-191; H.J. Blumenthal, "Proclus on perception", in *Bulletin of the Institute of Classical Studies*, 29(1982), 1-11.

<sup>323</sup> Cf. § 2 of this chapter, where this thesis is ascribed to Dionysius by John of Saint Thomas, *Cursus philosophicus*, cit., 180b. The Dionysian conception of hierarchy is an essential element in Thomas' doctrine of the hierarchy of "species intelligibiles"; cf. *Summa contra Gentiles*, II, c. 98, 1836-38.

<sup>324</sup> Cf. Macrobius, Calcidius, and Themistius. Obviously, the "species" in the Latin Proclus cannot be identified as such with a cognitive species *tout court*.

<sup>325</sup> In Proclus Diadochus, *Tria opuscula*, ed. H. Boese, Berlin 1960, 29.

<sup>326</sup> In *Tria opuscula*, 51.

("quo intelligitur"), already known at the time of Moerbeke's translations, but far from being generally accepted<sup>327</sup>.

In the Moerbeke translation of the *Parmenides* commentary of Proclus, species are associated with a specific layer of reality, namely to the Intellect's. Initially, the Latin Proclus observes that "genera" pertain to God, whereas the intellect is the realm of "species", and the soul is the realm of "particula"<sup>328</sup>. Previously characterized as "imago entis"<sup>329</sup>, the species' hierarchical position bears on its mental and ontological status: Proclus fixes the ontological status of the (classificatory) species concept by assigning it to the level of mind. The species, insofar as it is just a reflection of divine ideas, exists as a hypostasis in the mind<sup>330</sup>. In another passage, the species are viewed as existing in the soul, and as being epistemologically related to the "rationes" abounding in nature<sup>331</sup>. Similarly, the species is also related to the higher entities it arises

<sup>327</sup> Thomas develops this doctrine already in his commentary on the *Sentences* (1254-56), *De Veritate*, and, more extensively, in the *Summae* and his commentary on the *De anima*.

<sup>328</sup> Proclus, *Expositio in Parmenidem Platonis*, ed. C. Steel, 2 vols., Leuven-Leiden 1982-1985, 80; cf. 114. On the diffusion of this scarcely known commentary—translated by William in the years between 1278-1286—cf. C. Steel, "Introduction", 1\*-2\*; see *idem*, 34\*f. Notice, however, that Moerbeke translated this work at the Papal court, which may be considered as a fertile ground for the circulation of ideas. Proclus was highly rated by North-European Dominicans, as the case of Dietrich of Freiberg illustrates; also Henricus Bate was influenced by his thought (their positions will be discussed in ch. III, § 5). In the Renaissance, Cusanus, Pico and Ficino were acquainted with his thought; see *idem*, 38\*. For the influence of Proclus' view of the *formae exemplares* on Bonaventura and Thomas, see C. Steel, "Proclus et les arguments pour et contre l'hypothèse des idées", in *Revue de Philosophie ancienne* 2(1984), 3-27, on p. 25, and notes 53-54.

<sup>329</sup> *In Parmenidem*, 22.

<sup>330</sup> Every species is, in fact, "pars intelligentialis universi", cf. *In Parmenidem*, 471.

<sup>331</sup> *In Parmenidem*, 141-42: "Sed et si natura habeat rationes, oportet quandam et ante hanc causam esse contentivam aliter specierum. (...) Melius ergo et nostra cognitione erit in causa mundi, secundum quod et illa non cognoscit solum, sed et instituit omnia, nos autem cognoscimus solum. Si autem cognoscit omnia conditiva causa universi, si quidem extrinsecus aspiciens, ignorabit iterum se ipsum et erit deterior partiali anima; si autem in se ipsum aspiciens, in ipso omnia erunt, intellectuales et cognitive species, et non extra in apparentibus solum"; cf. p. 145: "Rationibus ergo et speciebus immaterialibus novit mundiales rationes et species ex quibus est omne, et est in ipso omne, ut in causa sine materia. (...) sed et ordinem specierum conditivarum tradit, propter quem et sensibilia talem sortita sunt ordinem et dispositionem." In Proclus, one cannot distinguish between (onto)logical and cognitive species along the lines usually adopted in medieval philosophy.

from<sup>332</sup>. Thus, due to the gradual presence of the species and the tendency to assimilate lower layers to superior ones in the Proclian universe, species, like the ideas, are assigned a cognitive *and* an ontological status. Since they are connected with the intellect, species are *noemata*, although not every *noema* is a species<sup>333</sup>. Furthermore, they are primarily conceivable as intelligibles, that is, as model-like entities<sup>334</sup>.

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The origin and specific features of thirteenth-century philosophy are intimately related to the translations of Greek and Arabic philosophical and scientific texts. Therefore, a nuanced analysis of the individual themes of thirteenth-century philosophy requires a detailed study of doctrinal and terminological sources. The particular theme examined here calls for an assessment of the overall relevance of the Latin Proclus for the medieval controversy on formal mediating principles. Without such analysis, the mere fact that Scholastic philosophy is dependent on translations does not justify overhasty conclusions on the appropriation of ancient conceptions by thirteenth-century schoolmen. Some informative relationships, however, can be already pointed at from a correct historico-doctrinal perspective.

There are substantive differences between the concept of species in the Latin Proclus and the 13th-century doctrine of intelligible species. First of all, Proclus was committed to the view that knowledge cannot depend upon the senses, for otherwise it would be *de facto* weaker than the senses<sup>335</sup>: intellectual cognition is essentially

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<sup>332</sup> On the hierarchical position of species, cf. *In Parmenidem*, p. 281.

<sup>333</sup> *In Parmenidem*, 227. The interpretation of intelligible species as "notio" or *noema*, developed in a different doctrinal context, is found in Agostino Nifo, and other Renaissance philosophers; see above, and ch. VI, § 3, and VII, § 3.2. One has to recall, however, that during the Renaissance only Cusanus, Pico and Ficino were surely acquainted with the *Parmenides* commentary; see C. Steel, "Introduction", 38\*.

<sup>334</sup> See *In Parmenidem*, 230-33, against the Stoic interpretation of the doctrine of ideas, cf. above.

<sup>335</sup> *In Parmenidem*, 222.

contemplation of and participation in the (intellectual) species<sup>336</sup>. However, it is just this view of participation—entailing the immanent production and simultaneous reception of species—that reappears, though in a different doctrinal context, also in Thomas' psychology<sup>337</sup>. This is a particular aspect of the well-known influence of the Neoplatonic participation theory<sup>338</sup> on Thomas' philosophical psychology. Indeed, Aquinas shares the Neoplatonic theses that species exist exclusively in the mind, are related to "rationes" in natural reality, and have a hierarchical structure<sup>339</sup>. The peculiar role of species gives rise to the thorny problem of their precise ontological status<sup>340</sup>. Any Neoplatonic philosopher—and Proclus is a perfectly good example—could solve this problem by assigning a proper ontological 'layer' of reality to the species. But this solution is not available in the frame of Thomas' metaphysics of being. This is the basic motive for the persisting ambiguity of intelligible species: its function is clear and well grounded, but its ontological status cannot be satisfactorily determined.

There are some commonalities between the species of the Latin Proclus and the metaphysical implications of Aquinas' doctrine of cognitive species. However, they seem insufficient for establishing Aquinas' dependence on Proclus with respect to this specific topic. Moreover, one has to recall here that Thomas knew only his *Tria opuscula* and *Elementatio theologica*. Possible correspondences should be determined only on the basis of these works. The later translation of the *Parmenides* commentary by Moerbeke might have stimulated the reception of Thomas' species doctrine into a

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<sup>336</sup> In *Parmenidem*, 245, 251; cf. p. 514: "Intellectus autem et intellectualis scientia et ipsam cognoscit speciem et comprehendit cognoscibile et per simplicem iniectionem."

<sup>337</sup> See ch. II, § 3; this aspect of Thomas' thought, insofar as the doctrine of cognitive species is concerned, is stressed by G. Siewerth and K. Rahner, see *ibidem*.

<sup>338</sup> Cf. K. Kremer, *Die neoplatonische Seinsphilosophie und ihre Wirkung auf Thomas von Aquin*, Leiden 1966; cf. also C. Fabro, *Partecipazione e causalità secondo S. Tommaso d'Aquino*, Torino 1960.

<sup>339</sup> See ch. II, § 3, and, for the species' hierarchical structure: *Summa contra Gentiles*, II, c. 96, 1814 and c. 98, 1836.

<sup>340</sup> The determination of the species as a *quo* in Thomas will engender serious problems concerning the ontology of this principle, because no Aristotelian category seems to fit the species. Sensible species will be conceived of as (substantial and accidental) physical entities by Robert Grosseteste and Roger Bacon, but similar problems arise.

Proclean key, thus amplifying the Neoplatonic tendencies already present in his psychology. Indeed, a typically Neoplatonic view of the nature and function of intelligible species will be endorsed by Henry Bate and Dietrich of Freiberg, whose acquaintance with Proclus has been convincingly demonstrated<sup>341</sup>.

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<sup>341</sup> Cf. ch. III, § 5.

## CHAPTER TWO

### FROM THE SPREAD OF ARABIC AND ARISTOTELIAN PSYCHOLOGY TO THOMAS AQUINAS

The massive inflow of Arabic and Aristotelian philosophical and scientific texts during the 12th and 13th centuries was a source of radical doctrinal innovation for Western psychology and epistemology. Until the 12th century, philosophical psychology was mainly based on Augustine; the Bible, Boethius, and patristic sources, possibly supplemented by a rather defective acquaintance with Galen and the *Corpus Hippocraticum*<sup>1</sup>, completed the conceptual horizon of 12th-century psychological writings. To be sure, the important medical works translated from the Arabic by Constantine of Africa in the latter half of the eleventh century, provided new impulses for theoretical psychology<sup>2</sup>, and also the new translation of Nemesius of Emesa's *De natura hominis* by Burgundio of Pisa (1155-9)

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<sup>1</sup> Cf. *L'anima dell'uomo. Trattati sull'anima dal V al IX secolo* (Pseudo-Girolamo, Cassiodoro, Alcuino, Rabano Mauro, Ratramno, Incmaro, Godescalco), ed. I. Tolomio, Milano 1979, pp. 9, 11-12. Psychological investigations in the Early Church were largely dominated by disputes concerning the (im-)materiality of the human soul. Tertullianus, Hilarius, and others presented a materialistic view of the soul, which was challenged by Origen, Gregory of Nyssa, and Claudianus Mamertus (5th-century Platonist, author of *De statu animae*, ed. G. Engelbrecht, Vienna 1885). Complicated developments originated from the fact that many Neoplatonic philosophers, like Iamblichus, Proclus and Philoponus, supposed a material, 'spiritual' vehicle for the human soul. For an analysis of disputes on the nature of the human soul, see O. Lottin, *Psychologie et morale aux XIIe et XIIIe siècles*, vol. I, Louvain-Gembloux 1942, 391f; G. Verbeke, "Transmission d'Avicenne à l'occident. Les chemins de l'histoire", in *Revue de théologie et de philosophie* 114(1982), 51-64; G. Verbeke, "Introduction", in Némésius d'Émèse, *De natura hominis*, cit., chap. II. The psychological speculation at the courts of Charlemagne and Charles the Bold were also dominated—with the obvious exception of John Eriugena—by theological problems; cf. *L'anima dell'uomo*, cit., 26f.

<sup>2</sup> This is evident in William of Saint-Thierry, *De la nature du corps et de l'âme*, ed. M. Lemoine, Paris 1988; cf. "Introduction", 9f. Guillaume was born in Liège, 1085; studied in Paris; wrote his *De natura corporis et animae* probably between 1138 and the year of his death, 1145.

elicited some psychological discussions<sup>3</sup>. Yet the systematic focus of psychological treatises remained restricted mostly to anatomo-physiological or theological problems<sup>4</sup>. In Peter Lombard's authoritative textbook, the domain of anthropology is delimited to man and his supernatural vocation<sup>5</sup>; the interest for Book II, distinction 3, of his *Sentences*, manifested in the later species controversy is difficult to understand in the light of this restriction<sup>6</sup>.

Anselmus is frequently quoted by later 13th-century authors. His impact on the species controversy, however, is limited to one passage from his *Monologion*<sup>7</sup>. Initial and rather vague reverberations of Hellenistic epistemological discussions can be found in Honorius<sup>8</sup>. Only in Abelard and Hugh of Saint Victor one finds attempts

<sup>3</sup> See G. Verbeke, "Introduction", in Nemesius, *De natura hominis*, cit.

<sup>4</sup> Cf. Guillaume de Saint-Thierry, *De la nature du corps et de l'âme*, and Aelred de Rievaulx (1109 (?)—1166), *Dialogus de anima*, ed. C.H. Talbot, in *Opera omnia*, ed. A. Hoste & C.H. Talbot, Turnhout 1971, 683-754. For a sample of the tenor of pre-Peripatetic, medieval psychology, see also the pseudo-Augustinian *Liber de spiritu et anima*, in *Patrologia Latina*, vol. 40, 779-832, which consists of a rather unsystematic compilation of passages from various authors, including Augustine, Boethius, Cassiodorus, Isidore, Beda, Alcuinus, Hugh of Saint Victor and Isaac de Stella († 1169). For discussion of the 12th-century psychology, see also P.M. Michaud-Quantin, "La psychologie dans l'enseignement au XIIe siècle", in *L'homme et son destin au Moyen Age*, Louvain-Paris 1960, 407-415.

<sup>5</sup> Cf. P.M. Michaud-Quantin, "La psychologie dans l'enseignement au XIIe siècle", 407-409.

<sup>6</sup> Petrus Lombardus, 1095—1160; 1140 teaches at the school of the cathedral in Paris; 1159 bishop, there. I have used the following edition: *Sententiae in IV libris distinctae*, 2 vols., Grottaferrata 1971. The third distinction of the second book is devoted to the angels; extending the doctrinal context, most Scholastic commentators examined also, in analogy to human knowledge, the nature of angelic knowledge and whether it needed any species.

<sup>7</sup> *Monologion*, c. 33, in *Opera omnia*, ed. F.S. Schmitt, 6 vols., Stuttgart-Bad Cannstatt 1968, vol. I, 52: "Nam nulla ratione negari potest, cum mens rationalis seipsam cogitando intelligit, imaginem ipsius nasci in sua cogitatione; immo ipsam cogitationem sui esse suam imaginem, ad eius similitudinem tamquam ex eius impressione formatam. Quamcumque enim rem mens seu per corporis imaginationem seu per rationem cupit veraciter cogitare, eius utique similitudinem, quantum valet, in ipsa sua cogitatione conatur exprimere."

<sup>8</sup> Honorius Augustodunensis, ca. 1080—ca. 1140; probably of German birth; spent some time in England, but the greater part of his life and work was associated with Regensburg; wrote historical, didactic and theological works, as well as widely read encyclopedic treatises; most notable is his adaption of John Eriugena's *Periphyseon*, the *Clavis Physicae*. Stoic reminiscences can be isolated in this *Clavis Physicae*, ed. P. Lucenti, Roma 1974, 73: "Tercius autem anime motus est per quem anima sensilium rerum imagines, quas Greci fantasias vocant, recipit, et per se rationes proprias in essentias, in genera, in formas, in species dividit"; cf. also p. 198. On p. 200, Honorius formulates an innatistic position: "Omnium autem rerum sensibilibum et intelligibilium, que potest humana mens intelligere, notio quedam inest homini."

toward finding philosophically significant answers for the problem of knowledge acquisition and that of the status of mental processes. These real beginnings—which enable us to understand, from a more properly historical perspective, the impact of translated Peripatetic works—are analyzed in the first section of this chapter.

The 12th- and 13th-century translations of Aristotle's and Avicenna's writings provided new paradigms for philosophical psychology, significantly different from those originating with Augustine or Boethius<sup>9</sup>. Early 13th-century psychology was heavily influenced by Avicenna, whose *De anima* blurred the linguistic and conceptual contrasts between Peripatetic and Neoplatonic psychologies<sup>10</sup>. In fact, the spread of Avicenna's views strengthened the prevailing spiritualistic tendency in psychology, in addition to furnishing it with a robust philosophical foundation. And especially during the first decades of the 13th century, when Avicenna's thought was the centrepiece of philosophical discussion, the immediate and most evident consequence of this influence is a markedly spiritualistic interpretation of Aristotelian psychology and epistemology<sup>11</sup>. The supervening publication of Averroes' writings brought about only marginal changes in this doctrinal framework, because the Commentator, in discussion with Alexander<sup>12</sup> and other predecessors, was chiefly formulating arguments purporting to show that the intellect is not a "virtus in corpore"<sup>13</sup>. The overall

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<sup>9</sup> See also G. Verbeke, "Transmission d'Avicenne à l'occident latin", cit., 57. Moreover, after the translation of Avicenna's works, psychology will be more clearly distinguished from ethics; cf. P. Michaud-Quantin, "La psychologie dans l'enseignement au XIIe siècle", 412.

<sup>10</sup> Neoplatonic commentaries already emphasized Aristotle's alleged belief in the immortality of the soul, unwittingly providing him with a patent of acceptability for Christianity.

<sup>11</sup> Since Gilson's epoch-making essay, this doctrinal tendency is known as "augustinisme avicennisant".

<sup>12</sup> In the 13th century, Alexander of Aphrodisias was principally known through the writings of Boethius and Averroes, although some of his works had already been translated, namely *De intellectu* and *De sensu et sensato*. Cf. G. Théry, *Autour du décret de 1210: II. -Alexandre d'Aphrodise*, Le Saulchoir-Kain 1926 and F.E. Cranz, "Alexander Aphrodisiensis", in *Catalogus translationum et commentariorum*, ed. P.O. Kristeller, vol. I, Washington 1960, 77-135. For discussion, see also R.W. Sharples, "Alexander of Aphrodisias: scholasticism and innovation", in *Aufstieg und Niedergang der römischen Welt*, Teil II, Band 36.2, ed. W. Haase, Berlin 1987, 1176-1243.

<sup>13</sup> According to S. Gómez Nogales, "Saint Thomas, Averroès et l'averroïsme", in *Aquinas and Problems of his Time*, eds. G. Verbeke and D. Verhelst, Louvain-The Hague 1976, 161-177, an excessive polemical disposition against Alexander led Aver-



effect on medieval discussions in cognitive psychology is a sharp distinction between sense perception and intellectual knowledge: the newly discovered Peripatetic philosophy, especially in the interpretation provided by Arabic commentators, did not so much supersede the prevalent tendencies, but actually reinforced the then existing forms of psychological theorizing which was cast in an Augustinian mould.

In association with the reception of Arabic-Aristotelian thought, the “species intelligibilis” reappears during the period—called by Gauthier ‘first Averroism’<sup>14</sup>—coming to an end with Bonaventure’s refutation of Averroes’ psychology and noetics<sup>15</sup>. The chief representatives of the first generation of theologians who came across the psychology of Aristotle and his Arabic commentators—William of Auvergne, Alexander of Hales and Robert Grosseteste are cases in point—remain on the whole faithful to Augustinian principles. The problem of the soul is of special interest in this period. Accordingly, the appropriation of psychological ideas by theologians involves a greater challenge than the assimilation of ideas in physics and astronomy. The second section examines Albert the Great’s and Roger Bacon’s views on species, intentions and intellectual abstraction; the third section is devoted to discussing Thomas’ determination of the intelligible species as a formal principle of intellectual knowledge, the starting point for the subsequent medieval disputes.

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roes to the inevitable, but after all unwanted thesis of the uniqueness of the human intellect. On this basis, Gómez Nogalez draws the conclusion that Averroes was not an ‘Averroist’. R.A. Gauthier, “Préface” to Thomas Aquinas, *Sentencia de anima*, 221\*f, accepting this thesis, deems that ‘second Averroism’—namely, the monopsychistic interpretation of his psychology—is an invention of theologians, or at least the result of a biased reading. I do not share this interpretation. Nonetheless, a fundamental ambivalence can be traced in Averroes’ texts, which occasionally seem to presuppose the unity of the human soul, and then the uniqueness of the intellect. For further discussion, see B. Bazán, “Le commentaire de Saint Thomas d’Aquin sur le Traité de l’âme”, in *Revue des sciences philosophiques et théologiques* 69(1985), 521-547, on pp. 529-531. Notice that during the period of the so-called ‘first Averroism’, Averroes’ *De anima* commentary was not interpreted as defending the uniqueness of the human intellect; cf. § 1.3-4.

<sup>14</sup> R.A. Gauthier, “Notes sur les débuts (1225-1240) du premier «averroïsme»”, in *Revue des sciences philosophiques et théologiques* 66(1982), 321-374.

<sup>15</sup> In the first section, I will also consider the doctrine of the agent intellect in the works of these early 13th-century authors; their ideas on this faculty or separate entity bear fundamentally on their interpretation of *species intelligibiles*, in particular on the question whether these principles are innate.

# § 1. THE SPECIES BETWEEN INNATISM AND ABSTRACTION (1200-1250)

## 1.1. *Twelfth-century psychology: Peter Abelard and Hugh of Saint Victor*

Peter Abelard<sup>16</sup> puts forward challenging and historically innovative views on the relationships between mental operations and external reality. The legacy of Boethius' interpretation of Aristotle<sup>17</sup> is manifest in Abelard's claim that the act of intellection ("intellectus") presupposes an act of sense perception ("sensus") and employs images created by the imagination<sup>18</sup>. However, although intellection needs images or similitudes of things, our soul is not compelled to use only sense-dependent images; indeed, it can construct likenesses by itself<sup>19</sup>, since it is capable of transforming itself in all things<sup>20</sup>.

This historically recurring idea, already present in Augustine, is taken up by several Augustinian authors writing after the first criticisms of Thomas Aquinas' theory of intelligible species appeared<sup>21</sup>. Echoing, probably unwittingly, Stoic views on the ontology of cognitive impressions, Abelard remarks that a similitude created by the human soul is neither substance nor accident, thereby antici-

<sup>16</sup> Petrus Abaelardus, 1079 (Le Pallet, Brittany)—1142/4 (Chalon-sur-Saône); from ca. 1095 he studied under Roscelin and William of Champeaux; taught at various schools, studied briefly theology under Anselm of Laon and then returned to Paris to teach at Notre Dame from ca. 1116; probably at this time wrote the *Logica Ingredientibus*; after his tragic separation from Héloïse (ca. 1117-18), he became a monk; he was condemned for heresy in 1121; taught again in Paris between 1136-40, and again condemned as heretic in 1140; then retired in the abbey of Cluny.

<sup>17</sup> See his commentary to *De interpretatione*, and *Philosophiae consolatio*, V.4-5, prose.

<sup>18</sup> See *Logica ingredientibus*, in B. Geyer (ed.), *Peter Abelards philosophische Schriften*, Münster 1919-27, p. 20. See also Abelard, *Tractatus de intellectibus*, in L. Urbani Ulivi, *La psicologia di Abelardo e il «Tractatus de intellectibus»*, Roma 1976, 103-104. The attribution of the latter treatise is not generally accepted.

<sup>19</sup> See *Logica ingredientibus*, 20, and 313: "(...) quia per formas quasdam imaginarias quas sibi animus fingit, prout vult, rerum naturam contemplatur, imaginationem sive intellectum saepe retinens". Notice that Abelard does not draw sharp terminological distinctions between imagination and intellection.

<sup>20</sup> *Logica ingredientibus*, 315. For discussion, see J. Coleman, *Ancient and Medieval Memories. Studies in the Reconstruction of the Past*, Cambridge 1992, pp. 248f.

<sup>21</sup> See, respectively, ch. III, § 1 (for Augustine), and § 4 (for the post-Thomas generation).

pating debates on the ontological indistinctness of intelligible species<sup>22</sup>.

Hugh of St. Victor's<sup>23</sup> psychology is characterized by an unusual kind of eclecticism involving, in addition to Peripatetic elements<sup>24</sup>, Stoic doctrines<sup>25</sup> and more properly Augustinian tendencies. In *De unione corporis et spiritus*, Hugh analyses sense perception as a process evolving through various stages<sup>26</sup>. When external bodies impinge on sense organs, stimuli are transmitted to the bodily spirit, and are subsequently gathered by phantasy; the latter, in turn, impresses what emerges from this processing of sensory information upon the imagination<sup>27</sup>, which, finally, is capable of triggering the act of the rational soul. Hugh maintains that the senses, at their supreme level, are somehow capable of informing the rational soul<sup>28</sup>. The crucial transition from sensation to rational soul is based on the assumption that the bodily spirit, vehicle of sensory information, becomes an immaterial spirit. Furthermore, the continuity between inner senses and rational soul provides the ground for asserting that the latter affects the former:

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<sup>22</sup> *Logica ingredientibus*, 314-150. Cf. Diogenes, *Lives of the Eminent Philosophers*, VII.61: "A notion or object of thought is a presentation to the intellect, which though not really substance nor attribute is quasi-substance or quasi-attribute."

<sup>23</sup> Hugo de Sancto Victore, ca. 1096-1141; born in Saxony; became a pupil of William of Champeaux at Saint-Victor in Paris; later taught at the same school and became prior there in 1133; wrote on theology, Scripture, and contemplation.

<sup>24</sup> Cf. *Didascalion*, in *Patrologia Latina*, vol. 176, 743c, regarding the theory of the three souls, which is probably derived from Boethius' commentary on Porphyry; see *Commentaria in Porphyrium a se translatus*, in *PL*, vol. 64, 71f.

<sup>25</sup> Stoic influences were already present in Augustine's theory of sense perception; cf. ch. III, § 1.

<sup>26</sup> *De unione corporis et spiritus* was written in opposition to the medical doctrine according to which the animal spirit is held to give rise to reason and intellect; for discussion, see J. Jolivet, "The Arabic inheritance", in *A History of Twelfth-Century Western Philosophy*, cit., 113-148, on p. 129.

<sup>27</sup> *De unione corporis et spiritus*, in *PL*, vol. 177, 287d: "Sensus namque sive per visum, sive per auditum sive per olfactum, sive per gustum, sive per tactum, extrinsecus corpus contingens formatur, ipsamque formam ex corporis contactu conceptam intrinsecus reducens permeatus singulis sensibus emittendis et revocandis introrsum dispositos ad cellam phantasticam colligit, eamque illi parti puriori corporei spiritus imprimens imaginationem facit."

<sup>28</sup> *De unione corporis et spiritu*, 287d: "Postea eadem imaginatio ab interiore parte capitis, ad mediam transiens ipsam animae rationalis substantiam contingit, et excitat discretionem, in tantum jam purificata et subtilis effecta, ut ipsi spiritui immediate

Sic itaque ab infimis et extremis corporibus sursum usque spiritum incorporeum, quaedam progressio est per sensum et imaginationem; quae duo in spiritu corporeo sunt. Postea in spiritu incorporeo proxima post corpus est affectio imaginaria, qua anima ex corporis conjunctione afficitur, supra quam est ratio in imaginationem agens. Deinde ratio pura supra imaginationem in qua ratione supremum est animae a corpore sursum.<sup>29</sup>

Hugh does not provide a detailed account of how the transition between physiologically organized senses and immaterial rational soul actually occurs. He posits a communication between the two levels without supposing any real contact. The movement from below ("sursum") might be taken to suggest a mechanical process of knowledge acquisition. Hugh's Augustinian background, however, dominated by psychological activism, excludes *de facto* this interpretation. And his eclecticism draws him away from the idea, shared by most Platonic contemporaries, that sensitive faculties are sublimated into the rational soul. Hugh's alternative view is that the senses enjoy a relatively wide degree of autonomy in their relation to the rational soul. This is quite congenial to the species doctrine, and one should not be surprised that a late Scholastic author such as Aversa invokes his authority in defence of intelligible species<sup>30</sup>.

### 1.2. *Dominicus Gundissalinus and John Blund*

Before delving into the first elaborations of the Aristotelian-Arabic psychology, let me briefly recall the change of meaning to which the term "species" was subjected. Originally, this term meant "aspect", "form", or "exterior appearance"<sup>31</sup>. During the Middle Ages various shifts of meaning and refinements occurred<sup>32</sup>. As early as Augustine, the term can be found in psychological contexts, indicating the image or likeness of a perceived object in

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conjungatur. (...) Est itaque imaginatio similitudo sensus, in summo corporalis spiritus, et in imo rationalis corporalem informans et rationalem contingens."

<sup>29</sup> *De unione corporis et spiritu*, 288d-289a.

<sup>30</sup> Cf. Raphael Aversa, *Philosophia metaphysica physicaeque complectens quaestionibus contexta*, tomus II, Romae 1627, 809b.

<sup>31</sup> See P. Michaud-Quantin, "Les champs sémantiques de *species*", 113; cf. Seneca, *De ira*, I.3, 3-8.

<sup>32</sup> For the classical roots of this term, see also ch. I, § 4.

the senses and the intellect<sup>33</sup>. This use of the term persists throughout the Middle Ages, and is systematically applied in Scholastic theories of sense perception and intellectual knowledge.

Dominicus Gundissalinus<sup>34</sup>, the first author who injects Avicennian views into the overall framework of Augustinian psychology<sup>35</sup>, does not mention the concept of intelligible species. Yet, he is an important stepping-stone in the history of this concept, because he re-introduces the so-called *species impressa* in psychological contexts<sup>36</sup>. In his *De anima*, the terms "forma" and "species" are still equivalents for "intelligibilia", characterized in accordance with Avicenna as "res per se existentes" emanating from a separate principle<sup>37</sup>. They are also viewed as forms which the intellect may 'extract' from the imagination<sup>38</sup>, however.

Gundissalinus endorses, in its essential traits, the theory of the circular propagation of primordial forms, formulated in Avicenna's neoplatonically oriented interpretation of Aristotle. The human

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<sup>33</sup> Cf., for instance, Augustine, *De Trinitate*, XI, c. 9: a corporeal object gives rise to an incorporeal likeness, a species, in both external and internal senses. See also *De Trinitate*, XIII, c. 1 and, for a more detailed discussion, ch. III, § 1.

<sup>34</sup> Dominicus Gundissalinus, † after 1181; was archdeacon of Segovia and then of Toledo; his scholarly activity does not seem to have begun before 1140-50; he collaborated with a 'magister Iohannes' in translating Algazel and Avicenna; basing himself on these translations, he also authored a number of independent works, including *De anima*.

<sup>35</sup> Cf. Dominicus Gundissalinus, *De anima*, ed. J.T. Muckle, with an introduction by E. Gilson, in *Mediaeval Studies* 2(1940), 23-103, on pp. 86-87 for the assimilation of "sapientia" and "scientia" to the agent and, respectively, the possible intellect.

<sup>36</sup> Dominicus Gundissalinus, *De anima*, in caput X, p. 88: "Unde cum intellectus qui est in potentia coniungitur cum illo intellectu qui est in actu aliquo modo coniunctionis, imprimatur in eo aliqua species formarum quae est adepta ab extrinsecus." Cf. p. 90: "Intentio enim impressa animae una est, quae non est nisi imaginatio prima (...)." For impressed intentions and species, see also Augustine, discussed in ch. III, § 1.

<sup>37</sup> *De anima*, p. 93-94: "Vel dicemus quod ipsae formae intelligibiles sunt res per se existentes, quarum unaquaeque est species et res per se existens. Sed intellectus aliquando conspicit illas et aliquando avertitur ab illis et postea convertitur ad illas. Et anima est quasi speculum, ipsae vero quasi res extrinsecae quae quandoque apparent in ea quandoque non apparent, et hoc fiat secundum comparationes quae sunt inter eas et animas; vel ex principio agente fluant in animam formae una post aliam iuxta petitionem animae"; cf. p. 94. On p. 99 Gundissalinus identifies the *intellectus agens* with God.

<sup>38</sup> *De anima*, 88: "Imaginabilia enim sunt intelligibilia in potentia et fiunt intelligibilia in effectum, non ipsa eadem, sed quae extrahuntur ex illis." See Avicenna, *Liber de anima*, V.5, 127-128.

soul, by virtue of its central position in reality, that is, in the circulation of forms, grounds knowledge in forms that are either derived from the imagination or impressed by separate substances. Nevertheless, only the impression of forms seems capable of ensuring an intellectual grasp of the world's intelligible structure. Thus, just as in Avicenna, the two different modes of access to forms are not alternative options, and should rather be seen as complementary moments of a more comprehensive mental activity.

Also in the *De anima*<sup>39</sup> (ca. 1210) of John Blund<sup>40</sup>, Avicenna is the main source for psychological theorizing, as is shown by Blund's definition of intention<sup>41</sup> and the analysis of intellectual knowledge<sup>42</sup>. A surprising feature of this work, rather uninteresting insofar as the nature and function of mental representations are concerned, is the sharp departure from Avicenna's thought with regard to the "intellectus agens", which is not determined as God or as a separate substance<sup>43</sup>. Writing some 15 years before the first impact of Averroes' writings on the West, Blund's view is an emblematic anticipation of a new era in psychological theorizing. The first authors influenced by Averroistic noetics adopt a similar standpoint.

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<sup>39</sup> John Blund, *Tractatus de anima*, ed. D.A. Callus & R.W. Hunt, London 1970.

<sup>40</sup> Iohannes Blund, ca. 1185—1248; studied arts in Paris; ca. 1205/06 master of arts, Paris; returned to Oxford to teach; then studied theology, Paris; ca. 1220 master of theology, Paris; 1229 returned to Oxford because of troubles in Paris; friend of Grosseteste; 1232 elected Archbishop of Canterbury, but never consecrated; 1231 chancellor of York; for more bio-bibliographical data, cf. *Tractatus de anima*, "Introduction", vii-viii. For discussion of his psychology, see also D.A. Callus, "The treatise of John Blund on the soul", in *Autour d'Aristote: Recueil d'études (...) offerts à A. Mansion*, Louvain 1955, 471-495; E. Bertola, "E' esistito un Avicennismo latino nel Medioevo? II", in *Sophia* 39 (1971), 278-320, on p. 286f.

<sup>41</sup> *Tractatus de anima*, 69: "Dicendum est quod intentio est res accepta ab estimatione non cadens in sensum ut mediante sensu apprehendatur ab anima, ita quod non exigatur vis alia ad intentionis apprehensionem, nec est eius ymago in sensu vel in ymaginatione".

<sup>42</sup> *Tractatus de anima*, 92f.

<sup>43</sup> *Tractatus de anima*, 93: "Intellectus agens est vis anime apprehensiva rerum universalium abstrahendo eas ab accidentibus."

### 1.3. *De anima et de potenciis eius* (ca. 1225) and *De potentiis animae et obiectis*

The anonymous treatise *De anima et de potenciis eius* (ca. 1225) offers an exposition of Aristotelian psychology mainly following the doctrinal lines of Avicenna and Averroes<sup>44</sup>. This shows that Western authors became acquainted with Averroes' writings before the period until recently indicated in critical studies. A remarkable feature in the initial reception of Averroism is the characterization of the agent intellect as a faculty of the human soul<sup>45</sup>. This view is endorsed also by the unknown author of *De anima et de potenciis eius* along with a rather peculiar assimilation of the material intellect, which grasps species in the phantasms<sup>46</sup>, to the "cogitativa". Both the material intellect and its species occupy an 'intermediate' position between the corporeal world and the realm of the separable intellect. Indeed, the apprehension of species, that are present in phantasms, is sharply distinguished from the grasp of the immaterial, spiritual object of intellective cognition *tout court*<sup>47</sup>. Material intellect and separable intellect belong to a multilayered hierarchical structure. Moreover, as will be argued below, this material intellect cannot be identified with the possible intellect as such. Therefore, it is almost compelling to conclude that the anonymous author, following many Neoplatonics and also Averroes, identifies

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<sup>44</sup> "Le Traité *De anima et de potenciis eius* d'un maître ès arts (vers 1225)", introduction et texte critique par R.A. Gauthier, in *Revue des sciences philosophiques et théologiques* 66(1982), 3-55.

<sup>45</sup> Cf. R.A. Gauthier, "Introduction", in *De anima et de potenciis eius*, 17-19, and ll. 453-63; this interpretation of Averroism will not be abandoned until the criticisms of Bonaventure and Kilwardby.

<sup>46</sup> Cf. *De anima et de potenciis eius*, p. 49: "Et dicitur etiam intellectus materialis, quem vocat Aristotiles passibilem et corruptibilem. Hec potencia media est inter potenciam sensibilem et intellectum separabilem: potencia enim sensibilis est circa fantasmata, intellectus separabilis circa species, hic autem intellectus materialis considerat species in fantasmatis, ita quod apprehendit species cum accidentibus, distinguens inter speciem et accidentia, non tamen abstrahens; et sic preparat materialiter species intellectui separabili." This doctrine will be resumed by Jean de la Rochelle, Alexander of Hales, and later authors; cf. R.A. Gauthier, "Introduction", cit., 14 and 16.

<sup>47</sup> See also *De anima et de potenciis eius*, p. 33: "anima vero rationalis cognoscit rem spiritualem, vel simpliciter vel in corporalibus, sicut dicitur quod intellectus intelligit species in fantasmatis."

the passive mind with imagination, distinct from the thoroughly immaterial, possible and agent intellects<sup>48</sup>.

This early psychological treatise attributes two operations to the agent intellect: the abstraction of species, and their ordering in the possible intellect<sup>49</sup>. This view seems to be inspired by Aristotle's distinction between thought of undivided objects and discursive reasoning which developed, during the 13th century, into the theory of the three intellectual operations: "simplex apprehensio", judgment, and syllogistic (or discursive) reasoning. This rather unusual characterization of the agent intellect's operations persists only during the first decades of that century<sup>50</sup>; later authors generally assign discursive activity to the possible intellect, and narrow the function of the agent intellect to the illumination of phantasms and the abstraction of intelligible species<sup>51</sup>. Finally, it should be noticed that our anonymous author does not claim that all types of knowledge depend on sensible images: the basic concepts of ethics and theological knowledge, for example, are arrived at in other ways<sup>52</sup>. Obviously, this early master of arts does not experience an

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<sup>48</sup> Probably in order to highlight that the mind depends upon sensory images, Aristotle mentions in *De anima*, 424a24 a *pathetikos nous*. What he exactly meant, remains uncertain. Neoplatonics identified this 'passive nous' with imagination; see Themistius, *Paraphrasis de anima*, cit., 229; Philoponus, *In tertium de anima*, cit., 61; Simplicius, *Commentaria in III libros De anima*, interprete Evangelista Longo Asulano, Venetiis 1564, 4va. For discussion and background information, see H. Blumenthal, "Nous pathetikos in later Greek philosophy", in *Aristotle and the Later Tradition*, cit., 191-205; P. Huby, "Stages in the development of language about Aristotle's nous", in *idem*, 129-143. See also Averroes, *In De anima*, 89, 409, and 449. Notice, however, that the Latin Averroes did not identify the passive intellect with the material intellect; influenced by the terminology of Alexander of Aphrodisias, he uses the latter denomination for the Aristotelian possible intellect. See also during the period examined here, the work of David of Dinant, who identifies in his *Tractatus naturalis* the "passible" intellect with imagination; cf. *Quaternulorum fragmenta*, ed. M. Kurdzialek, in *Studia Mediewistyczne* 3(1963), 69f.

<sup>49</sup> Cf. *De anima et de potentiis eius*, p. 51: "Sicut enim lux facit resultare speciem coloris de ipso colorato in oculum, ita intellectus agens abstrahit species a fantasmatibus, quas preparavit ei intellectus materialis, et facit eas quodam modo resultare in intellectu possibili. Unde duo sunt actus intellectus agentis: unus est abstrahere species a fantasmatibus, alius est species abstractas ordinare in intellectu possibili."

<sup>50</sup> See the following *De potentiis animae et obiectis*, 157.

<sup>51</sup> Cf., for instance, Albert the Great, *De anima*, 207f.

<sup>52</sup> *De anima et de potentiis eius*, 53-54: "Set quia diximus supra quod intellectus agens abstrahit species a fantasmatibus et ordinat eas in intellectu possibili, hic notandum est quod aliquae forme sunt in intellectu possibili quas non abstrahit intellectus agens a fantasmatibus, set anima acquirit eas per rectam operationem, sicut sunt iusticia, prudentia; et aliquae sunt quas acquirit per superiorem illuminationem, ut quedam



open conflict in the process of amalgamating elements of Peripatetic psychology and his overall Augustinian framework for psychology.

The psychological theses of an anonymous *De potentiis animae et obiectis* (ca. 1230) involve a similar interpretation of Averroes<sup>53</sup>. There is conclusive evidence that the author of this work, strongly influenced by the treatise discussed above, was a theologian<sup>54</sup>. This confirms the absence of clear hostility towards Peripatetical psychological schemes in the initial (theological) appropriation of Aristotelian doctrines.

The agent intellect, according to this author, is distinct but not separate from the possible intellect, and is assigned the same tasks as in the previous anonymous work<sup>55</sup>. Here, however, the view of a twofold intellectual operation unfolds its more immediately psychological implications, namely, by distinguishing between abstraction of intelligible species and discursive thought as a sense-independent activity<sup>56</sup>. The attribution of autonomous activity to the possible intellect implies *de facto* a more prominent role of the latter in human cognition. Accordingly, this author maintains explicitly the possibility of intellectual knowledge without support of the body, and works out in more detail the views shared with the above mentioned anonymous master of arts<sup>57</sup>. He emphasizes, in nearly the same terms, the possibility of a superior *illustratio*, and thus the possibility of acquiring knowledge in ways that involve (but do not

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que intelliguntur de Deo et divino modo." A similar view is formulated later on by Albert the Great, *Summa theologiae*, ed. Borgnet, vol. XXXIII, Paris 1895, II, tr. 15, q. 93, m. 3, 204a and in *Commentarii in II Sententiarum*, ed. Borgnet, vol. XXVII, Paris 1894, dist. 24, a. 11, 409b.

<sup>53</sup> "The powers of the soul. An early unpublished text", ed. D.A. Callus, in *Recherches de théologie ancienne et médiévale* 19(1952), 131-170.

<sup>54</sup> For biographical data, cf. also R.A. Gauthier, "Notes sur les débuts (1225-1240) du premier «averroïsme»", cit., on pp. 335-36.

<sup>55</sup> *De potentiis animae*, 156-57.

<sup>56</sup> *De potentiis animae*, 157: "Abstrahit enim primo species intelligibiles a phantasmatibus, et deinde abstractas ordinat in intellectu possibili, ut possit intellectus possibilis consequenter operari per seipsum."

<sup>57</sup> *De potentiis animae*, 148: "Et intelligitur sic, quod est cognoscitiva [sc. anima sensibilis] formarum corporalium ut quod cognoscit et quo cognoscitur sit corporale, sed hoc in subiecta materia, illud vero non, et per hoc fit separatio a cognitione anime rationalis, que cognoscit aut per formas spirituales simpliciter, aut spirituales coniunctas corporibus, prout dicitur quod intelligit species in phantasmatibus."

coincide with!) abstraction<sup>58</sup>. The epistemological significance of such construction is that abstraction and illumination are not mutually exclusive processes.

Another symptom of the dependence on the earlier treatise is the characterization of the material intellect as passive and transitory, which is introduced to underscore the central position of this intellect between senses and full-fledged intellectual soul. Just as in the previous treatise, the material intellect depends on species for its knowledge; the species, though originating from the phantasms, are nonetheless defined as *intelligibiles*, which shows, among other things, that the term "intelligible species" was used as early as 1230<sup>59</sup>.

Loquamur ergo primo de prima vi in ordine isto anime rationalis, scilicet, intellectu materiali, qui ponitur in libro *De anima*, passivus et corruptibilis. Et iste recipit species intelligibiles in phantasmatibus. Oportuit enim hanc vim esse, ut intellectus, qui est separabilis, species intelligibiles abstractas a phantasmatibus intelligeret. Et hec vis est tamquam anime actus intellectualis communicans cum actibus anime sensibilis. Nam hec ad phantasmata terminatur, illa vero ex phantasmatibus materialiter tribuit species intelligibiles abstrahendas ab intellectu agente.<sup>60</sup>

The material intellect collects intelligible species from sensory representations, thus clearing the way for and simultaneously constraining, the separable intellect's cognitive grasp of them. More precisely, it furnishes intelligible species in a 'rudimentary' form, to be abstracted by the agent intellect.

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<sup>58</sup> *De potentiis animae*, 157: "Sed sunt alie forme que non indigent hac abstractione, sed sunt tamen non sine ipsa, et sunt adquisite in anime, quemadmodum sunt virtutes et scientie morales, et non oportet quod species istarum rerum abstrahantur a phantasmatibus rerum sensibilium." For innated moral knowledge, see also p. 160-61.

<sup>59</sup> See *De potentiis animae*, 157 (quoted above). O. Lewry, "Robert Kilwardby on meaning: A Parisian course on the *Logica vetus*", in *Sprache und Erkenntnis im Mittelalter*, Berlin-New York 1981, 376-384, on p. 381, dates the expression of the notion "species intelligibilis" at least back to Kilwardby's semantic writings, which appeared by 1240; cf. Tachau, *Vision and Certitude in the Age of Ockham*, 11, note 25.

<sup>60</sup> *De potentiis animae*, 155. The material intellect, conceived as receiving abstracted species, can be traced also in the contemporary Guillaume d'Auxerre, cf. *The Cambridge History of Later Medieval Philosophy*, eds. N. Kretzmann, A. Kenny, & J. Pinborg, Cambridge 1982, p. 446.

#### 1.4. *Alexander of Hales, Robert Grosseteste, Jean de la Rochelle, and William of Auvergne*

In substantial conformity with the theoretical pattern developed by the previously examined authors, Alexander of Hales<sup>61</sup> attempts to integrate Aristotelian and Arabic psychology into the Augustinian doctrinal context<sup>62</sup>. His strategy, however, is historically more influential than that of his predecessors.

Alexander, though rejecting the notion of a separate agent intellect, accepts Avicenna's abstraction theory<sup>63</sup>. Possibly inspired by contemporary psychological views on the relation between possible intellect and the "cogitativa", the *Summa halensis* introduces a more neatly drawn distinction between material and possible intellect. The material intellect, being connected to phantasy and directed towards species in sensory images, is transitory. The same species, once abstracted, are deposited into the possible intellect as intelligible species, and enable this intellect to attain knowledge of the sensible world<sup>64</sup>. An appealing feature of this view is that intel-

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<sup>61</sup> Alexander de Hales, ca. 1185 (Gloucestershire)—1245; studied and taught theology at Paris; ca. 1225 master of theology; joins the Franciscans in 1231; his *Summa*, written in collaboration with other authors, is the earliest philosophical contribution by Franciscans, and one of the earliest medieval works based on full knowledge of the Aristotelian *corpus* and the Arabic commentators. His (positive) opinion on intelligible species is mentioned by A. Rubio, *Commentarii in libros Aristotelis Stagyrtae* (...), *de Anima* (...), Lugduni 1613, 682.

<sup>62</sup> Cf. L.J. Bowman, "The development of the doctrine of the agent intellect in the Franciscan School of the thirteenth century", in *Modern Schoolman* 50(1972-73), 251-279, on p. 253. Alexander follows Aristotle as far as the knowledge of sensible world is concerned, taking a different stand on knowledge of God and the spiritual world; cf. *idem*, 255.

<sup>63</sup> J. Rohmer, "La théorie de l'abstraction dans l'école Franciscaine d'Alexandre à Jean Peckam", in *Archives d'histoire doctrinale et littéraire du Moyen Age* 3(1928), 105-184, on p. 112f. See also: P. Wilpert, "Die Ausgestaltung der aristotelischen Lehre vom intellectus agens bei den griechischen Kommentatoren und in der Scholastik des 13. Jahrhunderts", in *Aus der Geisteswelt des Mittelalters*, Festschrift M. Grabmann, Münster 1935, 447-462, on p. 454; A.-M. Goichon, *La philosophie d'Avicenne et son influence en Europe médiévale*, cit., 105-106.

<sup>64</sup> Alexander of Hales, *Summa theologica*, ed. PP. Collegii S. Bonaventurae, tomus II, Quaracchi 1928, Inq. IV, tract. 1, sectio II, q. 3, p. 451: "(...) intellectus vero materialis habet speciem in phantasmatibus, quam possibile est abstrahi per intellectum agentem, ut uniatur cum possibili. Sic ergo necesse fuit ponere intellectum materialem. Et quia habet aliquam colligantiam ad corpus, dicitur a Philosopho corrumpi quodam interius corrupto, non quod eius sit secundum se corruptio, sed ratione actus." In fact, elsewhere, the reception of intelligible species is described as the soul's proper passibility; see Alexander de Hales, *Quaestiones disputatae*, ed. PP. Collegii S. Bonaventurae, Quaracchi 1960, vol. I, q. 16, p. 230.

lectual knowledge is not jeopardized by the dependence of mental contents on the representational structures of internal senses. Indeed, the material intellect is a channel of communication ensuring the objective reference of sense-dependent mental contents.

The reception of intelligible species is specified in the *Summa halensis* in accordance with the origin of the species, that is, from phantasms or else from separate intelligible forms. The reception of abstracted intelligible species characterizes the intermediate position of the possible intellect—as simultaneously “separabilis” and “coniungibilis”—between the material intellect connected with the body and the agent intellect whose cognitive function is based on separate intelligible species:

Licet enim non sit intellectus possibilis ut forma separata a materia, est tamen separabilis; differentiae autem illae ‘separatum’ et ‘coniunctum’ sunt formarum in esse, sed secundum rationem sunt hae differentiae ‘separata, coniuncta, separabilis et coniungibilis’, et hoc modo se habet intellectus possibilis animae ut separabilis et coniungibilis, et ideo suum intelligere proportionale medium est inter intelligere speciem in phantasmate et speciem omnino separatam, et hoc est intelligere speciem abstractam a phantasmate.<sup>65</sup>

The notion of an intermediate possible intellect, occupying a central position between material and agent intellect, is Alexander’s compromise between the Augustinian concept of an inferior and superior *ratio* and Aristotelian noetics, as well as between the doctrine of illumination and Peripatetic abstraction<sup>66</sup>. This ‘central’ intellect is, in fact, a repository of intelligible species that are either separate *in se* or abstracted from the phantasms.

From a historical perspective, two other aspects of Alexander’s position should also be mentioned here. In the *Summa halensis*, the possible intellect has a double potentiality: its act, in addition to being contingent on actualizing species, is dependent on the agent intellect; this idea recurs in Albert the Great and Giles of Rome<sup>67</sup>. Furthermore, Hales’ distinction between cognition obtained “per

<sup>65</sup> *Summa theologica*, l.c., p. 454.

<sup>66</sup> Cf. also Rohmer, “La théorie de l’abstraction”, 11, on the Augustinian-Aristotelian syncretism in Alexander’s psychology.

<sup>67</sup> *Summa theologica*, l.c., p. 454. See also Albert’s and Giles’ doctrine of a double illumination of the agent intellect, discussed in § 2.1 and ch. III, § 2.3, respectively.

praesentiam" or else "per speciem"<sup>68</sup> may be seen as an anticipation of Duns Scotus' distinction between intuitive and abstractive knowledge<sup>69</sup>, with the qualification that Alexander's cognition "per praesentiam" is, roughly speaking, an intellectual intuition of mental contents not originating in the sensible world.

Robert Grosseteste<sup>70</sup>, though adhering to some sort of Neoplatonic position in psychology, regards Augustinian and Aristotelian views on knowledge acquisition as basically complementary. Aristotle's epistemology, a reasonable explanatory model only for the initial stages of cognition, is assigned a propedeutic value: Peripatetic scientific methodology cannot account for the supernatural vocation of man<sup>71</sup>.

In his scientific works, Robert sketches an analysis of the psychology of perception in terms of a theory of the multiplication of species, which is clearly influenced by the views of Alkindi and Avicenna on the central role of the 'universal force' in a 'radiant' universe<sup>72</sup>. Non-rational beings produce their effects by an emanation of power, called "virtus" or "species", corresponding to a quality of individual beings. Every natural agent propagates its powers—called "species" because their effects bear resemblance to the agent—towards surrounding bodies. As a consequence, studying how these species spread out, an evident example of which is the propagation of light in vision<sup>73</sup>, may result into a rational under-

<sup>68</sup> See *Summa theologiae*, tomus II, Inq. II, tract. III, sectio II, q. 1, 176: "Omnis cognitio fit aut per praesentiam aut per speciem sive similitudinem."

<sup>69</sup> It is, in fact, well-known that Duns Scotus was deeply influenced by conceptions of early Franciscans. Cf. ch. IV, § 1 for the cardinal role of species supplying the presence of cognitive objects in Duns.

<sup>70</sup> Robertus Grosseteste, 1168/75—1253; studied at Oxford, possibly also at Paris, 1209-1214; first chancellor of Oxford and first teacher to Friars Minor (1224/32-1235); elected bishop of Lincoln, 1235.

<sup>71</sup> This position is worked out in his commentary on the *Posterior Analytics*; see J. McEvoy, "La connaissance intellectuelle selon Robert Grosseteste", in *Revue philosophique de Louvain* 75(1977), 5-48, on pp. 21-22, 29. As is well-known, the propedeutic value of Aristotle's philosophy is a doctrine of later Neoplatonics. It is unlikely that Grosseteste read Averroes; cf. J. McEvoy, *The Philosophy of Robert Grosseteste*, Oxford 1982, 237-38.

<sup>72</sup> Cf. ch. I, § 3.1. However, Robert Grosseteste did not know Alhazen's *Perspectiva*.

<sup>73</sup> Cf. *De lineis*, in *Die philosophischen Werke des Robert Grosseteste*, ed. L. Baur, Münster 1912, 59-60 and *De iride*, in the same edition, 72-73. For an analysis of light propagation, see also *Commentarius in posteriorum analyticorum libros*, ed. P. Rossi,

standing of events in the physical world. However, probably inspired to Augustine, Grosseteste maintains both that (i) sensible reality produces species in sense organs and perceptual faculties, and that (ii) mind produces its own species<sup>74</sup>.

Grosseteste's commentary on the *Posterior Analytics* provides clear indications that his cognitive psychology is dominated by Neoplatonic doctrines. The ideas, existing as incorruptible universals in God's mind, are "principia essendi et cognoscendi". Since an immediate grasp of reality deriving from these superior principles is hindered by the intellect's bonds to the body, however, our soul must direct itself to the created light of the intelligences mediating knowledge of reality<sup>75</sup>.

In this same work, implicitly critical of Peripatetic noetics, Grosseteste emphasizes that intellectual, sense-independent knowledge is possible<sup>76</sup>. It is not surprising, in the light of this observation, that he rejects the distinction between active and possible intellect, for sensible images serve the sole purpose of awakening

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Firenze 1981, 385f. Cf. A.C. Crombie, *Robert Grosseteste and the Origins of Experimental Science 1100-1700*, Oxford 1953, 109-111. For a chronological list of Grosseteste's psychological writings, see J. McEvoy, *The Philosophy of Robert Grosseteste*, 229f. The psychology of vision will be treated more extensively with the aid of Alhazen's optics by Roger Bacon, Witelo and John Peckam; see § 2.3 of this chapter.

<sup>74</sup> Cf. J.T. Muckle, "The Hexameron of Robert Grosseteste. The first twelve chapters of Part Seven", in *Mediaeval Studies* 6 (1944), 151-174, on p. 163: "Similiter contingit videre exemplum Trinitatis in apprehensionibus intellectivis et que sunt proprie anime rationalis. Species enim apprehensibilis ratione sui, sive intellectu sive intelligentia, generat in sibi correspondente virtute suam similitudinem; quam similitudinem genitam coniungit anime intencio cum specie gignente eam." This construction of a species-generating soul is not to be confused with Robert's allegiance to the mixed theory of vision based upon sensible species entering in and a species outgoing from the eye. For Roger Bacon's perplexity about the latter doctrine, see *Opus maius*, pars V, ed. Bridges, vol. II, 52f. For a general discussion, see D.C. Lindberg, "Alhazen's theory of vision", cit., 339-341.

<sup>75</sup> Robertus Grosseteste, *Commentarius in posteriorum analyticorum libros*, ed. cit., 139-140; cf. 140: "et intellectus humanus, qui non est ad purum defecatus ita ut possit lucem primam immediate intueri, multotiens recipit irradiationem a luce creata, que est intelligentia, et in ipsis descriptionibus que sunt <in> intelligentia cognoscit res posteriores, quarum forme exemplares sunt ille descriptiones." For the theme of a superior illumination, see also pp. 240-41.

<sup>76</sup> *Commentarius*, 213: "Et similiter si pars suprema anime humane, que vocatur intellectiva et que non est actus alicuius corporis neque egens in operatione sui propria instrumento corporeo, non esset mole corporis corrupti obnubilata et aggravata, ipsa per irradiationem acceptam a lumine superiori haberet completam scientiam absque sensus adminiculo, sicut habebit cum anima erit exuta a corpore et sicut forte habent aliqui penitus ab amore et phantasmatibus rerum corporalium."

or exciting the soul<sup>77</sup>. And in view of this further claim, it is quite plausible that he would have regarded "species intelligibiles" abstracted from sensory devices as utterly superfluous entities<sup>78</sup>.

What is the relevance of Grosseteste's psychology in the historical development of the species doctrine? Robert defines a clear line of demarcation between the function and systematic characterization of Augustinian and Peripatetic psychologies. He claims that species exist both at the sensible and at the mental level. Sense-dependent species are not intelligible, however. Indeed, no production of intelligible species on the basis of sensory representational devices is postulated. Previous authors, though accepting illumination and sense-independent species, did not exclude the impact of perceptual acts on intellectual abstractions<sup>79</sup>.

Jean de la Rochelle<sup>80</sup> shares Alexander of Hales' view of the agent intellect<sup>81</sup>, and works out a systematic classification of cognitive faculties. He is probably the first author in the Latin West to undertake this task<sup>82</sup>. In his attempt to reconcile Avicenna and Augustine in the domain of intellectual cognition<sup>83</sup>, he formulates a tripartition

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<sup>77</sup> *Commentarius*, 215-16: through light in sensible things, the human soul gets an impulse to search for its own light. J. McEnvoy, "La connaissance intellectuelle selon Robert Grosseteste", 38. For a critique of a substantive distinction between receptive and active features of the human mind, see Olivi (ch. III, § 3.4) and Durandus (ch. IV, § 2.1); see also Renaissance philosophers such as Julius Caesar Scaliger, Francesco Piccolomini, and Giacomo Zabarella; cf. ch. IX, § 1-2.

<sup>78</sup> This is also the view of E. Gilson, "Pourquoi saint Thomas a-t-il critiqué saint Augustin?", in *Archives d'histoire doctrinale et littéraire du Moyen Age* 1 (1926-27), 5-127, on pp. 91-96; see also A.-M. Goichon, *La philosophie d'Avicenne et son influence en Europe médiévale*, 109. Gilson's interpretation, inasmuch as based on an alleged primacy of Augustinian illumination in Grosseteste, is corrected by J. McEnvoy, *The Philosophy of Robert Grosseteste*, 327-29, and 346f.

<sup>79</sup> These play a role in the effective grasp of separate forms. Cf. subsection 3.

<sup>80</sup> Jean de la Rochelle, ca. 1200—1245; succeeds in 1241 to the chair of Alexander of Hales; his *Tractatus de divisione multiplici potentiarum animae* and *Summa de anima* are written, respectively, between 1233-39 and 1239/40-1245.

<sup>81</sup> Cf. Wilpert, "Die Ausgestaltung der aristotelischen Lehre vom intellectus agens", 455.

<sup>82</sup> Cf. P.M. Michaud-Quantin, "Les puissances de l'âme chez Jean de la Rochelle", in *Antonianum* 24 (1949), 489-505.

<sup>83</sup> See *Summa de anima*, ed. T. Domenichelli, Prato 1882, pars II. Cf. Michaud, "Les puissances de l'âme chez Jean de la Rochelle", 498-9 and Bowman, "The development of the doctrine of the agent intellect in the Franciscan School of the thirteenth century", 205-207.

of the intellectual soul<sup>84</sup>, and identifies the boundaries of abstraction-based knowledge with the apprehension of sensible reality<sup>85</sup>. Jean is not thereby advocating a cleavage between soul and body. At the same time, however, he does not assign sensible images an effective role in the generation of intellectual knowledge. Rejecting explicitly any contact between soul and body, but allowing for some kind of 'communication' between them, his position is similar to Hugh of Saint Victor's eclecticism<sup>86</sup>. He postulates a "colligatio" between body and soul, foreshadowing some kind of "colligantia" theory, as for example in the later developments by Olivi<sup>87</sup>. The characterization of the species as an instrumental *quo* is a remarkable trait of his thought:

Species vero, sive formae abstractae a materia, quaedam sunt abstractae per naturam propriam, ut spiritualia omnia; quaedam vero per actionem ipsius virtutis intellectivae, idest consideratione, ut species, sive similitudines, quibus cognoscuntur corporalia.<sup>88</sup>

This functional role, assigned to the species by Jean de la Rochelle, may be seen as an anticipation of Aquinas' species theory. However, the mediating role of abstracted species is not elaborated any further in his works<sup>89</sup>.

William of Auvergne's<sup>90</sup> sharp criticisms of 'first Averroism' can be viewed as the first significant turning point in the development of 13th-century psychology<sup>91</sup>. The indivisibility of the human soul

<sup>84</sup> Rohmer, "La théorie de l'abstraction", 135-36.

<sup>85</sup> *Summa de anima*, 294; cf. *Tractatus de divisione multiplici potentiarum animae*, ed. P.M. Michaud-Quantin, Paris 1964, 94.

<sup>86</sup> See above subsection 1.

<sup>87</sup> *Summa de anima*, 194: "Actio corporis in corpus est per contactum, actio spiritus in spiritum per applicationem, sicut accidit in daemoniis (...) actio vero corporis in spiritum est per colligationem ipsius spiritus ad corpus non per contactum, ut patet in colligatione corporis et animae." For discussion, see Rohmer, "La théorie de l'abstraction", 125; for Peter Olivi, see ch. III, § 3.4. This doctrine recurs in Suarez; see ch. X, § 1.6, in vol. II (forthcoming).

<sup>88</sup> *Summa de anima*, 285.

<sup>89</sup> A similar view is presented in ps.-Petrus Hispanus, *Expositio libri de anima*, 316; on the authenticity of this commentary, see R.A. Gauthier, "Préface", in Thomas de Aquino, *Sententia libri de anima*, 236\*-238\*.

<sup>90</sup> Guillelmus de Alvernia, ca. 1180—1249; taught theology at Paris; bishop of Paris from 1228 until 1249; ca. 1240, wrote his *Tractatus de anima*.

<sup>91</sup> Cf. R.A. Gauthier, "Le traité *De anima et de potentiis eius*", 25. For William's reception of Aristotelian psychology, see also G. Jüssen, "Aristoteles-Rezeption und Aristoteles-Kritik in Wilhelm von Auvergne's *Tractatus de anima*", in *Knowledge*



is the basic tenet of his arguments against the distinction between possible and agent intellect, purporting to show that the latter, when viewed as a faculty of the human soul, is superfluous<sup>92</sup>. This line of argument anticipates the criticisms of Peter Olivi and Durandus of Saint-Pourçain<sup>93</sup>. William challenges the notion of an intellect that is at once “agens” and “recipiens”, and claims that knowledge of extramental reality is based upon an instrumental principle of sense perception and intellectual cognition<sup>94</sup>, which he calls “impressio similitudinis”<sup>95</sup>. This view cannot be interpreted in terms of genuinely Peripatetic psychological views: William holds that our soul extracts intelligible forms out of its own essence, and consequently locates the ultimate origin of intelligible forms in God<sup>96</sup>. Ironically, his characterization of the human mind as a mirror forces William to accept psychological views apparently more ‘Arabic’, and certainly more Platonic, than those developed by the first followers of Averroes in the West.

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and the *Sciences in Medieval Philosophy*, eds. R. Työrinoja and others, Helsinki 1990, 87-96.

<sup>92</sup> Cf. *Tractatus de anima*, in *Opera omnia*, Parisiis 1674, vol. II, Supplementum, 65-228, on p. 122a-b; 205a-210a. See also: P. Wilpert, “Die Ausgestaltung der aristotelischen Lehre vom intellectus agens”, 453.

<sup>93</sup> Cf. ch. III, § 3.4 and IV, § 2.1.

<sup>94</sup> *De retributionibus sanctorum*, in *Opera*, vol. I, 318: “(...) quia impressio fit in oculo a re visa non videtur, sed magis res a qua impressa est, et ad hunc modum se habere de formis et impressionibus imaginabilibus et intelligentiabilibus, quia non ipsae imaginantur aut intelliguntur sed magis res quarum sigillationes et similitudines sunt, nisi forte quis de eis considerationem per se fecerit quemadmodum et nos loquentes facimus.”

<sup>95</sup> *De retributionibus sanctorum*, 318: “Omne enim, quod sic extra animas nostras est, non apprehenditur ab animabus nostris nisi per impressionem similitudinis suae (...)”.

<sup>96</sup> *Tractatus de anima*, 214a: “Dico igitur quod virtus intellectiva efficitur habitus intelligendi prompte & expedite, & efficietur actu, & ultima sua perfectione qua futura est secundum intellectuale relucens ut praedixi tibi ad speculum lucidissimae, expressissimaeque universalis apparitionis quod est creator benedictus.” Cf. R.A. Gauthier, “Notes sur les débuts (1225-1240) du premier «averroïsme»”, 352-66. William considers the *Liber de causis* as genuine Aristotelian thought *par excellence*; like many others, he attributes a special value to the 9th prop. of this work: every “intelligentia” is “plena formis”. For his affinity with Roger Bacon, see also Gilson, “Pourquoi”, 46f and 80-83. William, however, does not unconditionally accept Avicenna. He rejects Avicenna’s cosmology and probably parts of his cognitive psychology as well.

1.5. *Innatism and the anonymous Lectura in librum De anima (ca. 1240-45)*

Most authors of the first half of the 13th century give an account of knowledge acquisition that relies heavily on Augustine's psychology and his doctrine of illumination. Augustine held that the soul is capable of an immediate cognitive grasp of its own essence and the moral virtues, whereas divine illumination is needed for knowledge of God and of the sensible realm. Insofar as the latter is concerned, however, Augustinian illumination does not presuppose innate contents: it merely ensures the formal correctness of our reports of the sensible realm<sup>97</sup>.

The authors discussed so far in this chapter attempt to reconcile the newly discovered Peripatetic psychology with Augustinian teachings in the domain of intellectual cognition. They use various strategies to achieve this end: qualitative discontinuities in the cognitive process are introduced, or distinctions are drawn between classes of objects, each class pertaining to a faculty in the hierarchically ordered totality of cognitive faculties. A feature shared by all such strategies is that Aristotle's and Augustine's epistemological approaches are applied to different domains of knowledge: most often, they are juxtaposed rather than really amalgamated. A similar methodological attitude characterizes the works of other authors, such as Philip the Chancellor<sup>98</sup> or pseudo-Witelo<sup>99</sup>. Generally,

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<sup>97</sup> See below, and ch. III, § 1.

<sup>98</sup> Cf. R.A. Gauthier, "Le cours sur l'*Ethica nova* d'un maître ès arts de Paris", in *Archives d'histoire doctrinale et littéraire du Moyen Age* 42(1975), 71-141, on p. 85, who examines an unpublished manuscript on Philip's noetics.

<sup>99</sup> See pseudo-Witelo [=Adam de Puteorum Villa], *De intelligentiis*, ed. Cl. Baemker, *Witelo, ein Philosoph und Naturforscher des XIII. Jahrhunderts*, Münster 1908. The author of *De intelligentiis*, written ca. 1220-30, holds that the human soul does not know by innate intelligibles, but in virtue of *received* contents (p. 34), which he also calls *species* (p. 38). Remarkable is his theorizing the possibility of a type of knowledge resembling the intuition of Duns Scotus and Ockham: "Anima enim in se habet multa, et multa cognoscit quae ex rerum praesentia sibi format et per speciem non recipit." (p. 39) Like the anonymous authors discussed above he draws a hierarchical distinction between possible and agent intellects (pp. 48-49) and supposes that the latter is capable of knowing: "Agentis enim intellectus duae sunt operationes, scilicet abstrahere intelligibilia a phantasmatis, uniendo ea intellectui possibili, et cognoscere rerum quidditates." (p. 49) On the identity of the author of *De intelligentiis*, see D.C. Lindberg, "Introduction" to reprint Alhazen, *Opticae thesaurus*, xi and R.A. Gauthier, "Notes sur les débuts du premier «averroïsme»", 351-2.

illumination is conceived as a superior source of cognition with respect to abstraction<sup>100</sup>.

In connection with the kind of innatism endorsed by these authors, we should bear in mind the fact that during this period the notion of an “intellectus agens”, as incorporating the ideas of the things, was at this time widely accepted at the Faculty of Arts<sup>101</sup>. The background for this doctrine is the Neoplatonic theory of knowledge of Arab authors such as Alfarabi and Avicenna, rather than Augustine’s psychology. In some authors only moral knowledge is innate<sup>102</sup>, but an extension to all intelligible forms or species is a quite natural development of this standpoint<sup>103</sup>.

For an adequate understanding of early 13th-century innatism, one has to take into account background elements of the overall philosophical discussion. Firstly, as already mentioned above, the appropriation of Aristotelian and Arabic ideas by theologically oriented authors<sup>104</sup> raises more conceptual problems in the field of (cognitive) psychology than in other scientific fields, such as physics or astronomy. Secondly, although the immortality of the human soul is not regarded as a controversial item yet, it is obvious that these early 13th-century authors stress the distinction between bodily capabilities, such as the senses, and the immaterial intellect. In particular, these faculties differ also with respect to the modalities of information and knowledge acquisition. Nevertheless, by accepting innate cognitive contents, mostly designated as “species”,

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<sup>100</sup> Cf. *De potentiis animae*, 148, 157-59; Jean de la Rochelle, *Tractatus de anima*, 91; Philip the Chancellor, in *Ex Summa Philippi Cancellarii quaestiones de anima*, ed. L.W. Keeler, Münster 1937, 63-64.

<sup>101</sup> Cf. R.A. Gauthier, “Le cours sur l’*Ethica nova* d’un maître ès arts de Paris”, p. 83f. Some Renaissance Aristotelians will advance an innatistic interpretation of the agent intellect in the light of the *De anima* commentary of Simplicius; cf., e.g., Marcantonio Genua’s position, discussed in Part Two, ch. VIII, § 1.2.

<sup>102</sup> Cf. subsection 3; this kind of ‘innatism’ fits the Augustinian framework.

<sup>103</sup> The innatism of forms or species is rejected by Albert the Great, *Summa de creaturis*, in *Opera*, vol. XXV, 459b; yet, in his *De anima*, he does not exclude the presence of innate species in the light of the agent intellect, see below § 2.1. According to R.A. Gauthier, “Le cours sur l’*Ethica nova*”, 89-90, Albert arrives at the aforementioned conclusion on the basis of a rather superficial interpretation of a quotation from Themistius in Averroes, *In De anima*, 496. Bonaventura, *In II Sent.*, dist. 24, p. I, a. 2, q. 4, in *Opera omnia*, vol. II, Quaracchi 1885, refers to the same view, examining it, however, more objectively than Albert.

<sup>104</sup> One must recall here that the first theologians appreciated as philosophers by their contemporary masters of arts are Albert and Thomas.

these authors move away from Augustine, who rejected Platonic innatism in *De Trinitate* and postulated a merely normative innatism in his doctrine of the eternal reasons<sup>105</sup>. The innatism with regard to content mainly stems from the Neoplatonic interpretation of Aristotelian noetics endorsed by Arabic commentators.

An extreme form of innatism regarding the agent intellect's contents is found in an anonymous commentary, written probably in the early 1240's. The author of this work remarks that the agent intellect possesses intelligible species, in the sense that they are actually present to it<sup>106</sup>. This agent intellect, which knows by virtue of the innate light<sup>107</sup>, is a plenitude of forms capable of actualizing the possible intellect<sup>108</sup>. Given this innatist framework, it is difficult to understand how the author of this commentary can still entertain the idea of intelligible species as originating from sensible ones<sup>109</sup>. The moulding influence of Neoplatonic doctrines is overwhelming. Intelligible species are assimilated to the "intelligibilia"<sup>110</sup>. Moreover, the intellect is viewed as possible only inasmuch as it is directed towards the phantasms, a familiar view put forward, among others, by Simplicius<sup>111</sup>. The author's observations on the merely

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<sup>105</sup> See *De Trinitate*, ed. W.J. Mountain, in *Opera*, pars XVI.1-2, Turnhout 1968, XII, c. 15, p. 378: "sed potius credendum est mentis intellectualis ita conditam esse naturam, ut rebus intelligibilibus naturali ordine, disponente Conditor, subiecta sic ista videat in quadam luce sui generis incorporea (...); *De diversis quaestionibus*, *Opera*, pars XLVI.2, 30-31; *De libero arbitrio*, in *Opera*, Pars II.2, Turnhout 1970, III.5, 13, p. 283: "Humana quippe anima naturaliter divinis ex quibus pendet conexa rationibus (...)"

<sup>106</sup> Anonymus Magister artium, *Lectura in librum de Anima*, a quodam discipulo reportata, ed. R.A. Gauthier, Grottaferrata 1985, III.2, p. 473, ll. 395-6: "Item, intellectus agens habet species intelligibiles sibi presentes et iunctas actu, possibilis autem non, set est in potencia ad illas"; cf. ll. 408-9, and p. 475, l. 450. See for discussion also R.A. Gauthier, "Préface", in Thomas de Aquino, *Sentencia libri de anima*, 247\*.

<sup>107</sup> *Lectura in librum de anima*, 472: "ergo lux anime sive intellectus, <cum> magis sit spiritualis et minus materialis quam lux que est in oculis gatti et lupi, multo magis poterit causa esse quare species intelligibiles fiant in ipso quam sit lux in oculis gatti et lupi quare de nocte possint recipere species sensibiles". For the later interpretation of the intellectual light in Albert and Thomas, see § 2.1 and 3.4.

<sup>108</sup> *Lectura in librum de anima*, 473.

<sup>109</sup> *Lectura in librum de anima*, 487.

<sup>110</sup> *Lectura in librum de anima*, 454.

<sup>111</sup> *Lectura in librum de anima*, 471. For Simplicius and his Renaissance followers, see ch. VIII, § 1, where this doctrine is also discussed.

accidental, that is non-essential, potentiality of the possible intellect must be understood from this same context<sup>112</sup>.

The constraints on the intra-mental production of intellectual cognition—developed later, at the turn of the century, by Dietrich of Freiberg, Henry Bate and James of Viterbo—introduce some variations on the theme of innatism: Dietrich's and Henry Bate's accounts strongly depend on Proclus' doctrine of metaphysical emanation, while James proposes some sort of dispositional innatism in his doctrine of inborn "aptitudines", which are to be identified with intelligible species<sup>113</sup>.

### 1.6. *Peter of Spain*

Peter of Spain<sup>114</sup> formulates a theory of the soul's "conformitas" to outer reality which provides, as it were, the 'missing link' in the doctrinal developments occurring between the innatism of early 13th-century psychology and Thomas Aquinas' doctrine of first principles which, contained in the light of the agent intellect, provide the *a priori* structure of intellectual cognition. The historical and conceptual significance of Peter's psychological views is strictly related to this intermediate position. On the one hand, Peter maintains that the agent intellect is a *knowing* faculty, a clear indication of his partaking in early Western attitudes towards Peri-

<sup>112</sup> *Lectura in librum de anima*, 474. The accidental character of the possible intellect's potentiality will be stressed also by Henry Bate, (ch. III, § 5.1), Jandun (ch. IV, § 4.2) and Renaissance authors, such as Giulio Castellani (ch. VIII, § 2.1). Furthermore, Theophrastus was already concerned for the possible intellect's ontology, cf. ch. I, § 2.

<sup>113</sup> See ch. III, § 4.5 and § 5.1-2.

<sup>114</sup> Petrus Hispanus, 1210/20 Lisbon—1277 Viterbo; studied philosophy and theology at Paris; ca. 1240 master of arts, Paris; then studied medicine, Paris or perhaps Montpellier or Salerno; 1246-50 'doctor in physica', that is, in medicine, at the university, Siena; 1261-64 at the papal court, Viterbo and Orvieto; 1268 personal physician of Gregory X; 1276 Pope; 1276 initiated a study of Averroism in the Paris faculty encouraged by bishop Etienne Tempier. Peter of Spain wrote a *Sentencia cum quaestionibus de anima*; this commentary was probably written ca. 1240, but certainly before 1260, and is published by M. Alonso as *Comentario al "De anima"*, Madrid 1944. He also wrote a *Sciencia libri de anima* (between 1250-1260), which is not a commentary on Aristotle, but an original treatise, published by M. Alonso, Madrid 1941. The *Expositio libri de anima*, ed. M. Alonso, Madrid 1952, is probably not authentic; see R.A. Gauthier, "Préface", in Thomas de Aquino, *Sentencia libri de anima*, 236\*-238\*.

patetic psychology<sup>115</sup>. On the other hand, his reflections on ontological principles and cognitive species anticipate *in nuce* the metaphysical problematic of Thomas' cognitive psychology.

In his outline of the Neoplatonic view of man as a microcosmos—as exemplified by *Fons vitae* (an important reference in his *De anima*-commentary)—Peter of Spain emphasizes that the soul's proportion or conformity with material things depends on its representational capacities<sup>116</sup>. Although the soul's conformity may itself be viewed as an innate capacity to represent reality, it becomes effective only with the aid of non-innate species, which are acquired by impression<sup>117</sup>. The emphasis on representational capacities plays a role in Peter's opposition towards (possibly unacceptable) physicalist consequences of the doctrine of sensibly impressed species<sup>118</sup>. As the soul is not affected by physical changes in sensible reality, any impression from the senses must be interpreted in terms of cognition or species<sup>119</sup>. The soul's relation to the sensible realm, characterized in terms of participation grounded in the soul's conformity to the world<sup>120</sup>, is not purely passive. It is exactly this view-

<sup>115</sup> Cf. Peter of Spain, *Comentario al "De anima"*, *Obras Filosóficas*, vol. II, ed. M. Alonso, Madrid 1944, 405-406.

<sup>116</sup> *Comentario al "De anima"*, 391 and 394: "Dicendum quod anima habet conformitatem cum omnibus rebus. Hec autem conformitas duplex est: una enim est in cognoscendo secundum quam species omnium in ipsa representatur. (...) Prima autem conformitas est per similitudines et per species rerum per quas cognoscit res."

<sup>117</sup> *Comentario al "De anima"*, 404: "Dicimus quod anima habet conformitatem cum rebus sibi innatam, non tamen completam nisi per representationem specierum que non est sibi innata."

<sup>118</sup> Reluctance to accept (aspects of) the physicalist categorical frame for cognitive psychology may be isolated also in Albert's rejection of the soul-subject thesis; cf. § 2.1. For a critical evaluation of the implications of impressed species, cf. ch. III, § 6.

<sup>119</sup> *Comentario al "De anima"*, 391. On the dematerialization of the "species intelligibiles susceptas", cf. *Sciencia libri de anima*, ed. M. Alonso, Madrid 1941, 439-440. Initially, Peter adhered to the Avicennian interpretation of Augustine and accepted the impression of separate forms by superior intelligences; cf. *Sciencia de anima*, 437: "Nam intellectus agens ad rerum superiorum contemplationem elevatus est, impressiones suscipit ex supremis causis rerum consistentias percipiens, omnes vero formas receptas possibili imprimit et sui splendoris ductu eum perlustrans eas ei reserat ac distinguit et sic in ea tamen tota notitia intellectiva perficitur." For discussion, see: M. Grabmann, "Die Lehre vom intellectus possibilis und intellectus agens im Liber de anima des Petrus Hispanus des späteren Papstes Johannes XXI", in *Archives d'histoire doctrinale et littéraire du Moyen Age* 11(1937-38), 167-208; J. Ferreira OFM, *Presença do agostinismo avicenizante na teoria dos intellectos de Pedro Hispano*, Pont. Antonianum, *Pars dissertationis*, Braga 1959.

<sup>120</sup> *Comentario al "De anima"*, 394.

point which adumbrates the metaphysical frame of Thomas' cognitive psychology<sup>121</sup>.

Just as Aquinas after him, Peter regards the species as instrumental in the soul's grasping of material reality, and claims that they depend on the formal structure of sensible reality. They represent the intelligible kernel of the sublunar realm; they are neither substances nor accidents, and should be regarded as "quid substantie" or "quid accidentis"<sup>122</sup>. This characterization bypasses idle disputes on the ontological status of such functional principles.

Peter's mild innatism, grounded in the soul's conformity to outer reality, is championed later by Giles of Rome<sup>123</sup>.

### 1.7. Bonaventure

Bonaventure<sup>124</sup> moves sharply away from the early 13th-century psychological tradition with his argument against Averroes' "monopsychism", presented in the second book of his Commentary on the *Sentences* (ca. 1250-1252)<sup>125</sup>. He contributes significantly to 13th-century psychological debates by an original synthesis of Augustinian and Aristotelian views on sense-dependent mental representations.

In accordance with some of his Franciscan colleagues, Bonaventure holds that epistemic access to the spiritual world cannot be attained through the senses, and that knowledge characterizable in

<sup>121</sup> Cf. § 3.6.

<sup>122</sup> *Comentario al "De anima"*, 402. Cf. Roger Bacon's view that there are species of both substances and accidents. For a similar definition of the species, see also Giordano Bruno, *De umbris*, quoted in ch. VIII, § 3.3, in vol. II (forthcoming). For the ontological indistinctness of cognitive impressions in Stoic philosophy, see ch. I, § 1.4.3; cf. also Abelard's views on the ontology of similitudes created by the mind, discussed in subsection 1, *supra*.

<sup>123</sup> See ch. III, § 2.3.

<sup>124</sup> Bonaventura (Giovanni di Fidanza), ca. 1217—1274; studied in Paris beginning 1234/35; master of arts in Paris around 1243; joined Franciscans, 1243/44; master of theology, 1254/55; elected minister general of Franciscans, 1257; active against radical Aristotelians in Paris from 1260s until his death.

<sup>125</sup> Cf. *In II Sent.*, in *Opera omnia*, vol. II, Quaracchi 1885, d. 18, a. 2, q. 1 and d. 24, pars I, a. 2, q. 4. See R.A. Gauthier, "Préface", in Thomas de Aquino, *Sentencia libri de anima*, 221\*-222\*; A. Poppi, "L'averroismo nella filosofia francescana", in *L'averroismo in Italia*, Roma 1979, 175-220, on p. 176f; Z. Kuksewicz, *De Siger de Brabant à Jacques de Plaisance. La théorie de l'intellect chez les Averroïstes latins des XIIIe et XIVe siècles*, Wrocław-Varsovie-Cracovie 1968, 15. A more systematic critique will be formulated by Thomas Aquinas, *Summa contra Gentiles* II, c. 59f.

this way concerns only the sensible world<sup>126</sup>. Although, like his predecessors, he tends to blur the distinction between possible and agent intellect in the context of Augustine's view on *ratio*, he introduces a distinction between the roles played by these intellects in mental activity as a whole. In particular, Bonaventure's analysis of sense-dependent knowledge, when considered in isolation from his views on the processes leading to knowledge of the spiritual world, is a fairly original account of the interplay between active and receptive functions of the human mind.

As a consequence of the fuzziness that besets his demarcation between possible and agent intellect, Bonaventure neither takes the latter as totally actual nor the former as straightforwardly passive. Indeed, the complete act of the agent intellect depends upon sensory information, while the possible intellect may be regarded as passive only in its connection with the body<sup>127</sup>. Its passivity, however, is not absolute: assisted by the agent intellect, the possible intellect processes the phantasms, thus abstracting species and ultimately grasping the essence of sensible objects<sup>128</sup>. In Bonaventure's *Itinerarium*, this final step is integrated in *diiudicatio*, apparently including the processes of abstracting from and/or purifying sensory representations<sup>129</sup>. With his emphasis on the primacy of

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<sup>126</sup> See *De scientia Christi*, in *Obras de San Bonaventura*, vol. II, Madrid 1957, 182: the "species accepta ab extra" does not suffice to explain moral concepts such as justice; and pp. 192-96: the "cognitio viae" and the "cognitio patriae" do not coincide. See also subsection 3 and 4 above. For the innateness of moral knowledge, see also Albert, *Summa theologiae*, in *Opera*, ed. Borgnet, vol. XXXIII, Paris 1895, II, tr. 15, q. 93, m. 3, 204a and *Commentarii in II Sententiarum*, in *Opera*, ed. Borgnet, vol. XXVII, Paris 1894, dist. 24, a. 11, 409b. For discussion, cf. N. Bizzotto, *Erkenntnis und Existenz. Eine Untersuchung über die Erkenntnislehre Bonaventuras*, Wien 1972, 150 and *The Cambridge History of Later Medieval Philosophy*, 450-453.

<sup>127</sup> It is clear that Bonaventure considers both intellects as knowing faculties.

<sup>128</sup> In *II Sent.*, dist. 24, p. I, a. 2., q. 4, ed. cit., 569: "nec intellectus possibilis est pure passivus; sed habet enim supra speciem existentem in phantasmate se convertere, et convertendo per auxilium intellectus agentis illam suscipere, et de ea iudicare. Similiter nec intellectus agens est omnino in actu; non enim potest intelligere aliud a se, nisi adiuvetur a specie, quae abstracta a phantasmate intellectui habet uniri." For discussion, cf. N. Bizzotto, *Erkenntnis und Existenz*, 22-24.

<sup>129</sup> See *Itinerarium*, in *Opera theologica selecta*, ed. A. S pinski, tomus V, Quaracchi 1964, cap. II, n  5, p. 301: "*Diudicatio* igitur est actio, quae speciem sensibilem, sensibiliter per sensus acceptam, introire facit depurando et abstrahendo in potentiam intellectivam. Et sic totus iste mundus introire habet in animam humanam per portas sensuum (...)." For discussion, cf. J. Rohmer, "La th orie de l'abstraction dans l' cole Franciscaine d'Alexandre   Jean Peckam", 149f.



judgment among operations of the intellect, Bonaventure foreshadows 16th-century developments exemplified, among others, by Zabarella and Piccolomini<sup>130</sup>. A conceptual presupposition inherent in his view is probably best captured by the tacit assumption that sensible species are 'received', while abstracted (intellectual) species, though not innate, are produced by the soul<sup>131</sup>.

The broader context of Bonaventure's psychological views is determined by the Augustinian notions of activism of the human soul and divine illumination, which is needed to carry out full-fledged mental acts<sup>132</sup>. The latter ensures only the *formal* adequacy of human knowledge; that is to say, the divine intervention does not concern objects of cognition as such, although it guarantees their correct formal representation by the mind<sup>133</sup>. Activism entails that all cognition is founded on the soul as divine "imago", and that it is therefore a primarily intra-mental production<sup>134</sup>.

In his analysis of knowledge of sensible reality, Bonaventure also endorses typically Peripatetic views. The intellectual soul knows only what is abstracted from matter. Thus, the human mind cannot access material reality, unless it abstracts appropriate similitudes, species or forms, capable of grounding mental acts:

Ad illud quod obiicitur, quod substantia intellectiva nihil cognoscit, nisi quod abstrahitur a materia; dicendum, quod hoc non facit propter hoc, quod ipsa sit omnino immaterialis, sed propter hoc, quod res non potest ei uniri secundum *veritatem*. Ideo oportet, quod uniatur secundum *similitudinem*, quam anima abstrahit a re. - Alia est etiam ratio, quia intellectus per similitudinem, per quam intelligit, debet fieri in actu intelligendi; illud autem, quod facit, rem esse in actu, *species* est et *forma*. Ideo anima non cognoscit rem, nisi

<sup>130</sup> See, ch. IX, § 1.1 and 3.

<sup>131</sup> Cf. also the views put forward by Matthew of Aquasparta and Roger Marston, discussed in ch. III, § 4.1 and 3.

<sup>132</sup> *De scientia Christi*, q. 4, 186, 196-202.

<sup>133</sup> Cf. Bizzotto, *Erkenntnis und Existenz*, 150, and A. Solignac, "Connaissance humaine et relation à Dieu selon Saint Bonaventure (*De sc. chr.*, q. 4)", in *San Bonaventura (1274-1974)*, Grottaferrata 1973, vol. III, 393-405, on pp. 394f for eternal reasons as cognitive means.

<sup>134</sup> Bizzotto, *Erkenntnis und Existenz*, 37. On the Augustinian context of Bonaventure's speculation, see also: L.J. Bowman, "The development of the doctrine of the agent intellect in the Franciscan School of the thirteenth century", 262-3 and H.J. Müller, *Die Lehre vom verbum mentis in der spanischen Scholastik*, Münster 1968, 58-62.

speciem eius et formam sibi imprimat; et hoc non potest esse, nisi illa abstrahatur a materia.<sup>135</sup>

Some sentences here seem to suggest that similitude or species is an instrumental principle by which (“per quam”) the intellect comes to grasp the sensible object. Bonaventure uses “species”, “similitude”, and “form” as interchangeable terms, however, assimilating *de facto* any possible mediating mental representation to the cognitive content *tout court*. This seems to be the upshot of Bonaventure’s cognitive psychology: the human mind accesses sensible reality by virtue of its formal structure, and grasps the latter. Species, as similitude *and* form, stands for the intelligible kernel of sensible things, and thus can be abstracted to become a mental content<sup>136</sup>.

Bonaventure’s impact on medieval and Renaissance controversies on intelligible species has been rather marginal; this reflects the fact that his views on technical issues, such as those regarding formal principles of human understanding, are superseded by more detailed and comprehensive views of later Franciscan authors, notably including John Duns Scotus.

### 1.8. Conclusion

Most authors of the first half of the 13th century assign a relatively unimportant role to the sensible world in the acquisition of knowledge. The reason for this is quite simple: in general, corporeal reality is supposed to provide no more than accidental stimuli. This is a central point, because the most strenuous adversaries of the doctrine of intelligible species will be authors unwilling to relinquish Augustinian activism or divine illumination. These developments can be properly understood only by reflecting on the profound transformation of the species doctrine at the hands of Thomas Aquinas, whose philosophical ideas were, as a matter of fact, the main polemical target of Augustinians. Thomas no longer identifies the species with the (innate or sensorily induced) object of the intellect, and introduces a novel characterization of the intelligible species as formal principle of intellectual knowledge. Thomas’ species, funda-

<sup>135</sup> *In II Sent.*, d. 17, a. 1, q. 2, ad 4, p. 415.

<sup>136</sup> Cf. also the views of the anonymous authors examined in subsection 3.

mentally viewed as a *quo intelligitur*<sup>137</sup>, is not *primarily known*, that is, known prior to an elaborate process of reflective introspection.

What do the authors treated in this section share when they speak of (intelligible) species? Although espousing different theories, they all assent to the view that knowledge can be acquired through abstraction and by superior illumination. Moreover, many of them (tacitly) appeal to the existence of innate contents or principles, or else propose a strictly intra-mental production of the content of cognitive representations. In either case, the term “species” is used to refer to the effectively known content. This term signifies, roughly speaking, something like the actual content of cognitive states, irrespective of how this content is brought about, that is, whether it is an effectively grasped innate content or an autonomously produced mental representation of the intelligible structure of sensible reality.

Early thirteenth-century speculations on the status and function of mental representations appear vague and even rudimentary when compared to the sophisticated accounts by Albert and Thomas. However, it would not be fair to judge the psychological views of those early thirteenth-century authors only from their fragmentary remarks about species. Their role in the development of Scholastic cognitive psychology must be understood from the wider perspective of assimilating and elaborating Peripatetic psychology. Within this wider framework, their innovative contribution is more evident, and their role can be more precisely specified: in the attempt of reconciling Aristotelian ideas with Patristic psychological constraints, they remove ideological obstacles towards the assimilation and possible use of Peripatetic psychology, thus paving the way for the scientific psychologies of Albert the Great and Thomas Aquinas.

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<sup>137</sup> In the following chapter I will discuss how his opponents amalgamate Thomas' and the multiplication of species doctrine, introduced by Roger Bacon and other authors interested in perspectivistic optics.

## § 2. ALBERT THE GREAT AND ROGER BACON: ABSTRACTION AND MULTIPLICATION OF SPECIES

### 2.1. *Albert the Great: the agent intellect as the source of intelligibility*

Albert the Great<sup>138</sup> is probably the first Scholastic to give an interpretation of Aristotle within a genuinely philosophical framework<sup>139</sup>. There are evident connections between his ideas and early thirteenth-century speculation: Albert's views on the psychology of cognition are characterized by a mild form of innatism, and he does not exclude the possibility of a superior, possibly divine illumination, conceived of in the traditional terms of light-metaphors.

For these reasons, Albert holds a position midway between the spiritualistic psychology of the previous authors and the sense-dependent cognitive psychology of Thomas. For a proper understanding of the specific role attributed by Albert to (intelligible) species in the cognitive process, one has to examine his overall views on abstraction and intention<sup>140</sup>, and the related prominent function he assigns to the agent intellect<sup>141</sup>.

The metaphysical framework of Albert's psychology is imbued with a variety of the Alexandristic doctrine of the agent intellect, in particular, an Arabic elaboration of Peripatetic noetics in a

<sup>138</sup> Albertus Magnus, ca. 1200—1280; joined the Dominican order in 1223 while studying at Padua; lector of theology in Germany, 1220's to 1230's; sent to Paris, 1240s, where he writes *Summa de creaturis* (1240-1243) and his comment to the *Sentences*; master of theology, 1245; taught at Cologne, 1249, where Thomas Aquinas was one of his students; paraphrased or commented on most of Aristotle's works, 1250's to 1260's (*De anima*, 1254-57, still based upon the "Vetus translatio"); writes *De intellectu et intelligibili* and *De unitate intellectus* between the second half of the 1250's and the early 1260's. For more bio-bibliographical data, see J.A. Weisheipl, "The life and works of St. Albert the Great", in *Albertus Magnus and the Sciences*, ed. J.A. Weisheipl, Toronto 1980, 13-51.

<sup>139</sup> Cf. B. Nardi, "La posizione di Alberto Magno di fronte all'averroismo", in idem, *Studi di filosofia medievale*, Roma 1979 (first edition 1960), 119f.

<sup>140</sup> On abstraction in Albert, cf. U. Dähnert, *Die Erkenntnislehre des Albertus Magnus gemessen an den Stufen der «abstractio»*, Leipzig 1934, 27f.

<sup>141</sup> Albert initially adhered to the noetics of 'first Averroism'; cf. *Summa de creaturis*, q. 55, a. 3, in *Opera*, ed. A. Borgnet, vol. XXXV, 466b. See also G. de Mattos, "L'intellect agent personnel dans les premiers écrits d'Albert le Grand et Thomas d'Aquin", in *Revue néoscholastique de philosophie* 43(1943), 145-161, on p. 149; P. Wilpert, "Die Ausgestaltung der aristotelischen Lehre vom intellectus agens", 456-59; B. Nardi, "La posizione di Alberto Magno di fronte all'averroismo"; R.A. Gauthier, "Le Traité *De anima et de potentiis eius* d'un maître ès arts (vers 1225)", 19.

Neoplatonic key<sup>142</sup>. Albert holds that all forms present in the soul are either direct emanations of the first intelligence (possibly of some other superior intellect<sup>143</sup>) or products of our abstractive power. The ultimate source of the latter, however, is still the first intelligence<sup>144</sup>.

In acquiring knowledge, our soul assumes the forms of the objects of cognition:

Dicimus igitur, quod omne apprehendere est accipere formam apprehensi, non secundum esse, quod habet in eo quod apprehenditur, sed secundum quod est intentio ipsius et species, sub qua aliqua sensibilis vel intellectualis notitia apprehensi habetur.<sup>145</sup>

Unlike many of his predecessors, Albert sharply distinguishes between cognitive object and (representational) intention or species in intellectual knowledge<sup>146</sup>. Intention is what enables our soul to achieve a perceptual or cognitive grasp of sensible things:

Adhuc autem notandum est, quod differunt forma rei et intentio rei; forma enim proprie est, quae informando dat esse actu materiae et composito ex materia et forma. Intentio autem vocatur id per quod significatur res individualiter vel universaliter secundum diversos gradus abstractionis; et haec non dat esse alicui nec sensui,

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<sup>142</sup> This does not mean that Albert viewed himself as a Platonist. Quite to the contrary, in Albert's writings, "Platonicus" usually is a pejorative label attached to Stoics, Epicureans, and "physici". For the different meanings of the qualification "Platonici" in Albert's psychology, see: P. Michaud-Quantin, "Les «Platonici» dans la psychologie de S. Albert le Grand", in *Recherches de théologie ancienne et médiévale* 23(1956), 194-207. According to J.A. Weisheipl, "Albertus Magnus and the Oxford Platonists", in *Proceedings of the American Catholic Philosophical Association* 32(1958), 124-139, Albert's polemics with Platonists includes also Oxford authors, such as Grosseteste, Kilwardby, and Roger Bacon.

<sup>143</sup> Cf. *De intellectu et intelligibili*, in *Opera*, ed. Borgnet, vol. IX, lib. I, c. 2, 478-9: ultimately all knowledge is engendered by the first cause; see also *idem*, c. 3, 482 for the illumination by celestial intelligences, and *De anima*, ed. Cl. Stroick, Münster 1968, III, tr. 3, c. 6, 215.

<sup>144</sup> *De intellectu et intelligibili*, lib. II, c. 2, 506a: "Formae igitur mundi sunt ab intelligentia ex hoc quod ipsa est intelligentia, et quando fiunt in anima, fiunt magis in anima ex parte illa qua fluunt a forma mundi, quam ex parte illa qua per esse sunt in materia."

<sup>145</sup> *De anima*, II, tr. 3, c. 4, 101b.

<sup>146</sup> Cf. *De unitate intellectus*, ed. A. Hufnagel, *Opera*, vol. XVII.1, Münster 1975, 23a: "Sed intellectus potius accipit intentionem formae quam formam nec accipit eam secundum intentionem individui nec sicut in subiecto, sed potius sicut locus et species formarum."

quando est in ipso, nec etiam intellectui, quando est in illo, sed signum facit de re et notitiam.<sup>147</sup>

The distinction between representation and object, among other things, plays a fundamental role in his argument against David of Dinant's pantheism:

Ad illud dicendum quod David prave intellexit litteram Aristotelis. Dicit enim Aristoteles, quod scientia secundum actum est res scita, et non secundum esse: et vocat scientiam intellectum speculativum, et vocat actum speciem rei intellectae. Species autem in anima est res extra per actum ipsius speciei, et non per esse quod habet in materia extra: et ideo non sequitur quod anima sit res intellecta, sed quod actus speculativus sit species rei intellectae, et non ipsa res: et sic intelligitur quod dicit Philosophus, quod anima quodammodo est omnia: quia species lapidis est in anima et non lapis.<sup>148</sup>

In his reflection on formal principles for intellectual cognition of sensible reality, Albert submits that species and intention have a rather specific epistemological role to play. Both intention and species have representational connotations. However, "intention" stands for the features of sensible things as they are represented in the (inner) senses, whereas "species" generally refers to the actual representation, at the intellectual level, of a material thing. Thus, intentions and species are no longer viewed as mere quasi-physical entities originating in sensible reality, as was maintained by authors such as Robert Grosseteste, and subsequently by Roger Bacon<sup>149</sup>. Furthermore, intentions and species, insofar as they relate to material things, are not assimilated to the cognitive object.

The process of knowing the forms of things through their intentions or species occurs "per lumen intelligentiae": the agent intellect owes its abstractive power to the first celestial intelligence.

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<sup>147</sup> Cf. *De anima*, II, tr. 3, c. 4, 102a. For the background of the theory of "esse intentionale", cf. Gauthier's observations in Thomas de Aquino, *Sententia libri de anima*, pp. 128, and 169, notes.

<sup>148</sup> *Summa de creaturis*, II, q. 5, a. 2, ad 4um, 72. This quotation indicates that Albert tends to regard the species as intellectual act; see also below. This position will be later developed by Godfrey of Fontaines, and many others; cf. ch. III, § 3.3-4.

<sup>149</sup> *De anima*, 102a: the intention is not to be viewed as "pars rei", but rather as "species totius notitiae rei". For the differences between Albert's position and, for instance, Grosseteste's multiplication theory, see L. Dewan, "St. Albert, the sensibles, and spiritual being", in *Albertus Magnus and the Sciences*, cit., 291-320, on p. 306, nt. 28.

Accordingly, the same superior intellect is ultimately responsible for the (potential) intelligibility of sensible forms<sup>150</sup>.

The representation of sensible reality in the human soul is brought about by the agent intellect, which generates the "esse intellectuale" of forms in the human soul by providing them with intelligibility:

Quod autem forma sit in simplici intelligentiae lumine, non habet a materia: quia antequam fuisset in materia, fuit in lumine: igitur quod forma efficiatur in anima, non habet a materia, sed ab intelligentia: et hoc quidem est necessarium: quoniam sicut color non habet a colorato corpore quod efficitur in visu, sed ab actu lucidi quod secundum effectum est lucidum: ita forma non habet a materia quod efficiatur in anima, sed ab actu intelligentiae agentis, quia secundum effectum intelligentia agens est. (...) ita ad esse in anima non indiget nisi lumine intelligentiae agentis, quod fluit in animam, et esse intellectuale formarum generat in anima.<sup>151</sup>

Since the agent intellect is the source and effective moulder of the intelligibility of mental contents<sup>152</sup>, any further exploration of Albert's views on intellective cognition requires a closer analysis of this crucial notion.

A central point in Albert's noetics is the doctrine of the extrinsic origin of the agent intellect<sup>153</sup>, which gives rise to a threefold relation to the human soul, namely, as cognitive faculty, as activating factor, and as form of the soul<sup>154</sup>. The fact that the agent intellect,

<sup>150</sup> *De intellectu et intelligibili*, lib. II, c. 2, 506a.

<sup>151</sup> *De intellectu et intelligibili*, II, c. 1, 504b.

<sup>152</sup> *De intellectu et intelligibili*, II, c. 3, 507b: "Ex hoc patet, quod agens intellectus universaliter agit universalitatis ordine intelligibilium quae sibi subjungitur. Ex his etiam concluditur, quod incessanter agit: (...) Ex hoc autem quod universaliter agit, sequitur ipsum esse formam omnium intelligibilium, quae tamen forma in unoquoque intellectu est secundum potestatem illius quod intellectuale esse participat, et non secundum potestatem primi agentis: et quod ipse est semen omnis intelligibilitatis, et quod sub actu suo omne intelligibile movet animam."

<sup>153</sup> For the extrinsic origin of the agent intellect, see *De natura et origine animae*, ed. B. Geyer, in *Opera omnia*, t. XII, Münster 1955, I, c. 5; *De animalibus*, in *Opera omnia*, ed. Borgnet, vol. XII, liber XVI, tr. 1; see also *De anima*, III, 205 and 222. The origin "ab extrinseco" of the active intellect has been analyzed by B. Nardi, "L'origine dell'anima umana secondo Dante", in idem, *Studi di filosofia medievale*, 9-68, on pp. 24-33. For the doctrinal background of the *nous thurathen* in Ancient Peripatetic philosophy, see Aristotle, *De generatione animalium*, 726b28; Theophrastus, *Fragmentum* 1a; P. Moraux, "Le *De anima* dans la tradition grecque. Quelques aspects de l'interprétation du traité, de Théophraste à Thémistius", in *Aristotle on Mind and the Senses*, eds. G.E.R. Lloyd and G.E.L. Owen, Cambridge 1978, 281-324, on pp. 294-95.

<sup>154</sup> *De anima*, 222, ll. 15-28.

whether as faculty, sub-structure, or formal principle, is intimately related to our soul does not rule out its essential separability. Indeed, it is this specific ontological status of the agent intellect which determines its cognitive role<sup>155</sup>.

In Averroes, the agent intellect was conceived as “facere universalitatem in rebus”<sup>156</sup>, whereas in Albert it ‘makes’ the species or intentions intelligible by removing, through progressive abstraction, their individuality<sup>157</sup>. It is just this feature that obstructs the intelligibility of materialized forms. Intentions and species originate from the sensible world, that is, they represent concrete material things. In agreement with the opinion of most of his predecessors, Albert deems the intellect incapable of abstracting intentions immediately from sensible things. Universal knowledge can be arrived at only through a gradual and stepwise process. The internal senses grasp intentions; these are immaterial, but nonetheless represent material things as individuals. From these intentions, the intellect abstracts new intentions, representing the same material objects in their intelligible structure, that is, as universals<sup>158</sup>.

The agent intellect, communicating with the body only through perception and lower cognitive faculties, joins the soul *a foris*. Since it possesses species in its own light, it is capable of an act which is specific of separate intelligences<sup>159</sup>. The innate presence of contents in the agent intellect’s light signals Albert’s close relationship to early 13th-century psychology, as well as a marked concep-

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<sup>155</sup> For the agent intellect as a source of intellectual light and being, see also: *De anima*, III, tr. 2, c. 11, 192-94 and *De natura et origine animae*, ed. cit., tr. 1, c. 5.

<sup>156</sup> Cf. *In De anima*, 12.

<sup>157</sup> *Summa de creaturis*, II, q. 58, a. 1, 501a and *De anima*, II, tr. 3, c. 4, 101b-102a. See U. Dähnert, *Die Erkenntnislehre des Albertus Magnus*, 77. According to A. Hayen, *L'intentionnel dans la philosophie de Saint Thomas*, Bruxelles-Paris 1942, 36, Albert is, thus, forced to assimilate intention to concept.

<sup>158</sup> *Summa de creaturis*, II, tr. I, q. 34, a. 3, 303a: from the intention of the particular the intellect abstracts an intention of the universal; and q. 46; cf. *De anima*, 167-168.

<sup>159</sup> *De anima*, III, tr. 2, c. 18, 204b: “Differt autem hic intellectus a possibili, quoniam, cum suum intelligere nihil aliud sit, nisi quod suum intellectuale lumen imbuitur intellectis speciebus et resplendet in eis, non egreditur suum intelligere extra ipsum; (...) Et quia lumen intellectus agentis non egreditur extra se, licet ad aliud terminetur, et hoc est proprium intelligentiarum separatarum et maxime intelligentiae primae et causae primae: (...)”; see also c. 19, 205, ll. 71-75.



tual distance from Thomas' view of the intellectual light<sup>160</sup>. Albert's noetics, not totally overshadowed by the work of Thomas, will be a significant influence on later authors; in particular, the view of a knowing agent intellect appears in the works of another Dominican friar, Dietrich of Freiberg, and of several 15th-century North-European Albertists, as well as in the *De anima* commentaries of various Renaissance Neoplatonic Aristotelians<sup>161</sup>.

The nature and role of the agent intellect, as understood by Albert, throw new light on the view that the knowing human soul truly *becomes* the known objects. According to Albert, the mind's affinity with its objects must be understood "secundum esse intentionale" of the species<sup>162</sup>. In my opinion, the qualification of the species as endowed with intentional being serves the purpose of emphasizing its denoting function with respect to knowable but still unknown material things. In this connection, we should notice that the mind is principally directed towards the objects to be known, rather than *vice versa*. Indeed, the soul's appropriation of the cognitive object does not imply that intellectual knowledge is purely receptive, for the agent intellect is a knowing faculty and does not depend on sensible images for attaining knowledge. Moreover, sense-dependent knowledge is not impressed by sensory representational devices, and is ultimately brought about by the agent intellect<sup>163</sup>.

Other aspects of Albert's views on species and intentions can be gathered from his account of the relation between possible and agent intellect. For Albert, the actualization of the possible intellect is directly dependent on the agent intellect: the light of the latter enables the former to grasp its object<sup>164</sup>. This overall view of the agent

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<sup>160</sup> See § 3.4. In this context, it is worthwhile pointing out Albert's interpretation of the Augustinian distinction between a "ratio superior" and a "ratio inferior". See, for instance, *Super Dionysii Epistulas, Opera*, vol. XXXVII.2, Münster 1978, 537a and 539a: "Aliter potest dici, quod in anima sunt duae partes, quaedam quae accipit ipsa simplicia secundum se, ut intellectus simplex, quaedam vero quae accipit a phantasmatibus." Cf. the early 13th-century interpretation of the Aristotelian noetics, discussed in § 1.

<sup>161</sup> See, respectively, ch. III, § 5.2, ch. VI, § 2 and ch. VIII, § 1.

<sup>162</sup> *De anima*, III, tr. 3, c. 12. Cf. U. Dähnert, *Die Erkenntnislehre des Albertus Magnus*, 87.

<sup>163</sup> *De unitate intellectus*, 29: the agent intellect generates all intelligible species.

<sup>164</sup> The possible intellect is in fact actualized by the agent intellect, rather than by intelligible species; cf. *Summa de creaturis*, II, tr. 1, q. 56, 478b and *De anima*, III, tr.

intellect, which produces intelligible contents and actualises the possible intellect, replaces the somewhat more primitive doctrine of the two operations of the agent intellect, as found in earlier authors<sup>165</sup>: action and reception in the various operations of intellectual cognition are assigned to the respective intellects according to more precise epistemic criteria<sup>166</sup>. Albert does not abandon the idea of a formal hierarchy between these faculties, however. Indeed, the possible intellect is characterized as “species” and “locus specierum”, while the agent intellect is “formalis intellectus”, that is, *form* of the possible intellect and all effectively known forms<sup>167</sup>. Thus, the human intellect actually encompasses both innate intelligible species and those that are abstracted or ‘detached’ from sensible reality. This is the rationale for Albert’s reluctance, documented elsewhere in his writings, to qualify the intellect as “subiectum” of the intelligible species<sup>168</sup>.

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2, c. 11, 194; c. 19, 205b: “(...) duo sunt opera agentis, quorum unum est abstrahere formas intelligibiles, quod nihil aliud est nisi facere eas simplices et universales, et secundum est illuminare possibilem intellectum, (...)” See also *Summa theologiae*, *Opera*, ed. Borgnet, vol. XXXII, Paris 1895, Pars II, tr. 4, q. 14, a. 2, p. 1, ad 1, 180a. In *De unitate intellectus*, 22 and 25, the possible intellect is informed by the agent intellect. The operation of the agent intellect affecting the possible intellect will recur in Giles of Rome; cf. ch. III, § 2.3.

<sup>165</sup> See § 1.2.

<sup>166</sup> See also *De anima*, 207f.

<sup>167</sup> *De intellectu et intelligibili*, II, c. 5, 510b: “Hic autem formalis intellectus, non est ille quem quidam formam rei intellectivam arbitrantur; quia, sicut jam ostensum est, ille non est formalis ad intellectum possibilem: eo quod species est possibilis intellectus talium specierum et locus, et omne formale esse potius accipit id quod intelligitur ab intellectu in quo est, quam quod det sibi esse formale, sicut species et locus formalia sunt ad ea ad quae comparantur: sed sicut in coloribus lumen est formalis hypostasis et perspicui et pervii et oculi et perspicui terminati, ita lumen quod est actus intellectus agentis, est forma et intellectus possibilis et ejus quod intelligitur.” See also *De unitate intellectus*, 22. The background of this view is the Neoplatonic reading of the Aristotelian comparison of the two intellects with form and matter (see *De anima*, III.4-5) in the cosmological noetics of Arabic authors. When dealing with forms not originating from abstraction, Albert does not draw a sharp distinction between forms and species; cf. also *De intellectu et intelligibili*, II, c. 8, 515b and *De anima*, III, tr. 2, c. 19, 205b (quoted above). For the characterization of the intellect as “species specierum”, see, e.g., Themistius, *Paraphrasis de anima*, 257-258.

<sup>168</sup> *De intellectu et intelligibili*, II, c. 1, 504b; c. 4, 510a-b; *De anima*, III, tr. 3, c. 11, 223; tr. 2, c. 7, 186, and c. 9, 189; *De unitate intellectus*, 9, 23, and p. 29a: “Multo simplicius autem hoc modo movet lux agentis species intelligibiles ad possibilem, et sunt in ipso non sicut in subiecto, sed potius sunt in ipso sicut lumen agentis intentionatum intentione rei, cuius est species intelligibilis, et ideo sunt in ipso sicut lux agentis, sicut lumen est in perspicuo sicut actus perspicui.” Initially, Albert endorsed the view of the possible intellect as “subiectum”, that is, inasmuch as its potentiality was

Knowledge is produced in and by the intellectual sphere; it cannot be accounted for in terms that are (even partially) physicalist. This seems the upshot of Albert's opposition to the soul-subject conception: according to Albert, a characterization of the intellect as subject would entail, that knowledge acquisition and recording can be understood exactly in the same terms as purely physical processes. His opposition, implicitly, contains a significant correction to the physicalist conceptual frame of Peripatetic psychology<sup>169</sup>.

The notion of cognitive species has broader applications in Albert's philosophy. He uses the term "species" in various contexts. Generally speaking, the species is similar to the intention, that is to say, it is assimilated to the instrument through which senses and intellect grasp characteristic features and essences of things; on this reading, it is distinct from "form" as perceptual and cognitive object. Albert, however, normally uses the term "intention" for this instrumental principle of perception and knowledge. "Species" is more frequently used for the effect or result of intellectual activity, that is, for describing permanent mental contents which (actually) represent cognitive objects. For this very reason, the mind is described as "*locus specierum*"<sup>170</sup>. From the characterization of the possible intellect, mentioned above, however, we may gather that the species is also viewed as a formal principle encompassing cognitive contents.

A similar ambiguity affects the species in its relation to the agent intellect. As *agens*, the latter is viewed as knowing in act, and therefore it contains intelligible species. As formal principle, however, the agent intellect unfolds itself in the production and

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concerned; cf. *Summa de creaturis*, 479a and 495a-b. The question whether the intellect might be regarded as "*subiectum*" will play a role in later medieval discussions, and in Renaissance controversies on intelligible species.

<sup>169</sup> With the term "physicalist" I merely want to qualify Aristotle's methodological approach, which subsumes psychology under natural philosophy. In medieval psychology, the discussion of the soul-subject view is intimately connected with the issue of the ontological status of mental representations and contents. See, in particular, the doctrine of the "*esse obiectivum*" (and synonyms), and its role in disputes on intelligible species; notably, in Hervaeus Natalis and the early William Ockham; cf. ch IV, § 1.3 and 5, and § 2. The question will be taken up again during Renaissance controversies; see, for instance, the positions of Nifo and Marcantonio Zimara, discussed in ch. VI, § 3 and ch. VII, § 1.2.

<sup>170</sup> In this sense, it may be compared with Averroes' "*intentio intellecta*"; cf. ch. I, § 3.3.

assimilation of abstracted, intelligible species: being a species or form, the agent intellect produces *ipso facto* the intelligible species<sup>171</sup>.

The claim that abstracted species are produced introduces an internal tension in Albert's psychology, which may even be interpreted as a straightforward inconsistency. However, we should not forget that in Albert's conceptual framework abstraction equals production: detaching potential intelligibles from their particular substrate amounts to reproducing them as mental contents.

Significant doctrinal developments about (intelligible) species can be isolated by comparing Albert's cognitive psychology with the views of some contemporary figures, for instance Bonaventure, and early 13th-century predecessors. In his reflection on abstractive knowledge, Albert draws a more substantive distinction between instrumental intentions and representing species on the one hand, and, on the other hand, formal essences of sensible reality *qua* objects of perception and knowledge. This distinction reflects a coherent integration of the Arabic concept of instrumental intention into a theory of cognitive, viz. intelligible species *in statu nascendi*. We have seen that, in the domain of perception, Albert uses indiscriminately the terms "species" and "intention" to stand for the instrumental principle of apprehension. A shift occurs in his analysis of the modes of intellectual cognition, where "species" is frequently used to denote the *result* (in addition to the principle) of intellectual activity. Clearly, Albert did not think it necessary to make a sharp distinction between actual mental representation and mental content. This assimilation of mental representation and content is, in my opinion, intimately connected to the standard view of innate species, which are not directly related to sensible reality, and which therefore can barely be distinguished from the content they bear.

Albert offers an innatistic view of the agent intellect. Moreover, he does not exclude a communication between the mind and superior celestial intelligences. Nonetheless, by secularizing the traditional light-metaphors, he endeavours to set limits to the effects of

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<sup>171</sup> *De unitate intellectus*, 25; cf. also p. 29, quoted in the previous note. See also *Summa de creaturis*, II, q. 5, a. 2, ad 4um, quoted above.

(divine) illumination in the actual production of intellectual cognition. Indeed, he espouses a theory of formal mediation in sensible and intellectual knowledge with the ambition of doing justice to Aristotle's views. Albert also endeavours to circumscribe more precisely the role of the agent intellect in the generation of human knowledge. When he uses expressions like "*generare esse intellectuale*" or "*facere universalitatem*", he is emphasizing the role of this intellect as a fundamental mental activity. By interpreting abstraction as *production*, he circumvents *de facto* the problematic implications of this activity as a mere 'unveiling' of the intelligible kernel of sensible reality. At the same time, however, Albert regards the agent intellect as a knowing faculty, and thus seems trapped in a circular account of the origin of human cognition: the latter is brought about by a *knowing* and relatively self-sufficient faculty.

Albert takes his Arabic predecessors as secure guides in the interpretation of Peripatetic psychology, and thus endorses the central tenets of the Neoplatonic emanation doctrine. This enables him to work out a cognitive psychology freed from the Augustinian legacy, without abandoning a formal hierarchy between possible and agent intellect, which also involves a hierarchical organization of cognitive contents. Thomas' theory of participation sweeps away this type of hierarchy in human cognitive acts, while preserving the Neoplatonically inspired metaphysical framework for cognition, which envisages a substantive communication between the various levels of being.

Albert cleared the ground for the development of a more sophisticated and genuinely philosophical psychology of cognition, in which the mental representation of sensible reality is distinguished from, and theorized as a necessary condition for, the grasp of more narrowly defined cognitive objects. His thought influenced the friar Dietrich of Freiberg, as well as 15th-century Northern Dominicans<sup>172</sup> and several Italian Renaissance Aristotelians<sup>173</sup>.

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<sup>172</sup> See ch. V, § 2.

<sup>173</sup> See ch. VI, § 2-3.

## 2.2. *Innatism after Albert: the anonymous Quaestiones in tres libros De anima (ca. 1260)*

The view that the intellect has innate contents appears also in psychological writings of the second half of the 13th century, for example, in an anonymous *De anima* commentary dating from about 1260 and written by a master of arts in Paris or Oxford<sup>174</sup>. The author of this commentary endorses the thesis, attributed by him to Averroes, that the active intellect is a faculty of the human soul, may be regarded as a late representative of 'first Averroism'<sup>175</sup>. He still uses the "vetus translatio", and is acquainted with the *De anima* paraphrase by Albert<sup>176</sup>.

The significant trait of this commentary, from our perspective, is a rather peculiar eclecticism in the treatment of knowledge acquisition. This author, just as many of his early 13th-century predecessors, relativizes the distinction between agent and possible intellects: they are form and matter of the same power, as it were<sup>177</sup>. He remarks that the potentiality of the human intellect is due to its connection with the body, and subsequently assumes the presence of "exemplaria" that are innate to the intellect. These exemplars do not have a clearly defined function in cognitive processes, however, because the connection with the body ("molis carnis") prevents direct access to them. Therefore, the embodied intellect, characterized as "tabula tota depicta existens in tenebris", attains knowledge through species abstracted from sensory images, rather than through remi-

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<sup>174</sup> J. Vennebusch, *Ein anonymer Aristoteleskommentar des XIII. Jahrhunderts. Quaestiones in tres libros De anima*, Paderborn 1963, "Einleitung", 71-86. This date of composition is challenged by A. Pattin, "Pour l'histoire du sens agent au Moyen Age", in *Bulletin de philosophie médiévale* 16-17(1974-75), 100-113, who, on p. 104, proposes the first decades of the 14th century. However, his argument is refuted by R.A. Gauthier, "Préface", in Thomas de Aquino, *Sentencia libri de anima*, 263\*-265\*.

<sup>175</sup> *Quaestiones in tres libros De anima*, q. 67, 292; for discussion, see "Einleitung", 76.

<sup>176</sup> Probably he refers just to this work for the doctrine (which he rejects) of the agent intellect as innate "habitus"; see *Quaestiones in tres libros De anima*, q. 67, 297, l. 245; 296, l. 223; cf. also R.A. Gauthier, "Le cours sur l'*Ethica nova* d'un maître ès arts de Paris", cit., 92.

<sup>177</sup> *Quaestiones in tres libros De anima*, q. 62, 270-1; q. 63, 274-5; cf. also q. 68, 303. The doctrinal background of this view is probably Albert's noetics; cf. *De intellectu et intelligibili*, II, c. 5, 510b, quoted above in subsection 1.

niscence<sup>178</sup>. Although neither the senses nor the phantasy with its species are capable of influencing or determining the possible intellect<sup>179</sup>, the species of the phantasy are viewed as “universalia in potentia”<sup>180</sup>. Indeed, the internal senses have a real function in the genesis of intellectual knowledge, since they are a receptacle of potential intelligibles. Intellective cognition, however, depends on an *actual* intelligible species, and only the active or formal feature of mind (the agent intellect) is causally responsible for the actualization of such species<sup>181</sup>.

The somewhat peculiar position of this author may be called ‘inoperative’ innatism. The presence of innate exemplars in the human mind does not grant privileged access to knowledge. Quite to the contrary, the human mind attains knowledge just because, *qua* active form, it is capable of processing sensory representations, and the intellect becomes actually knowing when receiving its own product.

### 2.3. Roger Bacon: multiplication of species

In addition to Aristotle’s cognitive psychology and Arabic speculation on abstraction and intentions, 13th-century perspectivist optics is the most important source for the debates on intelligible species<sup>182</sup>, especially for the developments following the reception of

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<sup>178</sup> *Quaestiones in tres libros De anima*, 275: “Licet enim per [exemplaria] sibi concreata quo ad statum sue separacionis semper intelligit, quando se super exemplaria convertit et approximat ad res quarum sunt, ita quod non fuit prius in potencia ad recipiendum exemplaria quam fuerit ipsis secundum actum, quia tamen ut coniunctus est corpori, per huiusmodi exemplaria nec intelligit nec cognoscit, sed solum per species rerum abstractas a fantasmatis per irradiacionem luminis intellectus agentis ipsas in se recipiendo.”

<sup>179</sup> *Quaestiones in tres libros De anima*, 287-88: “quoniam species uniuscuiusque sensibilis potest de se multiplicare se in virtutem sensitivam, non autem potest se multiplicare species intelligibilis usque ad virtutem intellectivam. quia in fantasmatis solum est in potencia, ex qua non potest produci ad actum nisi per agens aliud a virtute sensitiva, ut visum est.”

<sup>180</sup> *Quaestiones in tres libros De anima*, 286.

<sup>181</sup> *Quaestiones in tres libros De anima*, q. 66, 285: “ergo virtus fantastica non poterit movere intellectum possibilem. preterea, nichil est agens intellectum possibilem producendo de potencia in actum, nisi speciem intelligibilem in potencia faciat speciem intelligibilem in actu.” For a discussion of the noetics of this commentary, see Vennebusch, “Einleitung”, 60-67.

<sup>182</sup> For the role of Augustine’s considerations on species in this debate, see ch. III, § 1.

Thomas' views. Roger Bacon<sup>183</sup> is a central figure in this scientific tradition. For the explanation of all perception-based cognition, he works out a coherent doctrine of the "multiplication of species"<sup>184</sup>, based on the central claim that all natural causation occurs according to a process of emanation, the paradigmatic example of which is the propagation of light<sup>185</sup>. Bacon disentangles Grosseteste's physics of light from its metaphysical and cosmogonical context, and works it into a comprehensive doctrine of physical causation<sup>186</sup>.

Like Grosseteste before him, Bacon significantly broadens the meaning of the term "species"<sup>187</sup>: no longer used to describe specific perceptual events, it comes to denote the likeness emanating from any given object, independently of whether a percipient being

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<sup>183</sup> Roger Bacon, ca. 1214—1292/4; studied at Oxford; master of arts in Paris by 1237, where he lectured on Aristotle for at least ten years; relinquished his position and turned to experimental science and astronomical tables; joined the Franciscans around 1252-57; wrote his *De multiplicatione specierum* in 1262; at request of Pope Clement IV (1265-68), he outlined his reform of learning, the *Opus maius*, in 1267; the *Opus minus* and *Opus tertium* followed in 1268.

<sup>184</sup> For an extensive analysis, see Lindberg, *Rogers Bacon's Philosophy of Nature*, Oxford 1983, liii-lxxi.

<sup>185</sup> Cf. *Opus maius*, pars V, ed. Bridges, vol. II, 52: "Et ratio fit hujus positionis, quod omnis res naturalis complet suam actionem per solam virtutem suam et speciem, ut sol et caetera coelestia per suas virtutes immissas in res mundi causant generationem et corruptionem rerum; et similiter res inferiores, ut ignis per suam virtutem exsiccet, et consumit, et multa facit."

<sup>186</sup> Providing more coherent explicata of the notions already present in the work of Grosseteste and Robert Kilwardby, Bacon is evidently the first Western scholar to master Alhazen's *De aspectibus*. See for discussion: S. Vogl, "Roger Bacons Lehre von der sinnlichen Spezies und vom Sehvorgange", in *Roger Bacon Essays*, ed. A.G. Little, Oxford 1914, 205-227; A. Maier, "Das Problem der «species sensibiles in medio» und die neue Naturphilosophie des 14. Jahrhunderts", in idem, *Ausgehendes Mittelalter*, Band II, Roma 1967, 419-451, on p. 420f; D.C. Lindberg, *Rogers Bacon's Philosophy of Nature. A Critical Edition*, with English Translation, Introduction, and Notes, of *De multiplicatione specierum* and *De speculis comburentibus*, Oxford 1983; F. Alessio, *Introduzione a Ruggiero Bacone*, Bari 1985, 80-87; K. Tachau, *Vision and Certitude*, 3-26. For the sources of medieval light-metaphysics and epistemology, see K. Hedwig, *Sphaera lucis. Studien zur Intelligibilität des Seienden im Kontext der mittelalterlichen Lichtspekulation*, München 1980.

<sup>187</sup> Cf. Lindberg, *Rogers Bacon's Philosophy of Nature*, "Introduction", Iv, who concludes that the species was appropriated by Grosseteste and Bacon to denote Alkindi's universal force, radiating from everything in the world to produce effects. This view also bears specific similarities to the Democritean and Epicurean 'effluxus' theory, however; see, e.g., ch. I, § 1.1 and 1.4.1; for the differences, see ch. I, § 3.1 and below. For Bacon's affinity with Augustine's species-concept, which was largely determined by Hellenistic conceptions, see ch. III, § 1.



is present to receive it<sup>188</sup>. And indeed, the central meaning of "species" for Bacon is "primus effectus agentis"<sup>189</sup>. Though postulating species for every sense<sup>190</sup>, Bacon is chiefly concerned with the process of vision.

The visible object generates or 'multiplies' species of light in the transparent medium<sup>191</sup>. The multiplication of visible species proceeds in all directions through the medium until they reach and are 'impressed' on the eyes of the viewer<sup>192</sup>. Once received in the sense organ, each species is again multiplied along the optic nerves into the internal senses<sup>193</sup>. Thus, Bacon provides a physical analysis of the processes that are causally responsible for vision in particular, and for sense perception in general<sup>194</sup>. The internal sensitive faculties of the soul complete the process of apprehending sensible objects<sup>195</sup>.

According to Bacon, there is no ontological difference between the species and the things that produce them, namely, the things they are similitudes of. He introduces what may be called the

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<sup>188</sup> *De multiplicatione specierum*, I.i, 4-6: "Dicitur autem similitudo et ymago respectu generantis eam, cui assimilatur et quod imitatur. Dicitur autem species respectu sensus et intellectus secundum usum Aristotelis et naturalium, quia dicit secundo *De anima* quod sensus universaliter suscipit species sensibilem, et in tertio dicit quod intellectus est locus specierum. Dicitur vero ydolum respectu speculorum, sic enim multum utimur. Dicitur fantasma et simulacrum in apparitionibus sompniorum, (...) Forma quidem vocatur in usu Alhacen, auctoris *Perspective* vulgate. Intentio vocatur in usu vulgi naturalium propter debilitatem sui esse respectu rei, dicentis quod non est vere res sed magis intentio rei, id est similitudo. Umbra philosophorum vocatur (...) Dicitur vero virtus respectu generationis et corruptionis (...) Impressio vocatur quia est similis impressionibus; (...) Vocatur autem passio quia medium et sensus in recipiendo speciem patiuntur transmutationem in sua substantia, que transmutatio tamen est in perfectionem et salutem, nisi fiat plus quam sola species, ut postea melius exponetur." Extensive terminological surveys concerning the meaning of "species" can be found also in Robert Holcot (cf. ch. IV, § 3.2) and in Gregory of Rimini, *In II Sent.*, dist. 7, q. 3, 135.

<sup>189</sup> *De multiplicatione specierum*, 6.

<sup>190</sup> See *Opus maius*, pars V, 72-73.

<sup>191</sup> Cf. *De multiplicatione specierum*, II.i, 90.

<sup>192</sup> Strictly speaking, the propagation of species is not a real transmission of impressions, but a process of successive actualizations of the potentialities of the various media involved, that is, more akin to the propagation of a wave.

<sup>193</sup> *De multiplicatione specierum*, 6f. Similar materialistic and physiological species doctrines are put forward by the early Hobbes in *Short Tract* and Gassendi; see ch. XI, § 2 and 3, in vol. II (forthcoming).

<sup>194</sup> Notice, however, that the results of sense perception can be used as instruments by the rational soul. Nonetheless, they remain *material*; see *infra*.

<sup>195</sup> Cf. *Opus maius*, pars V, 8-9.

'principle of homogeneity': the species of a substance is substance, that of an accident is accident<sup>196</sup>. The conformity and likeness between species and things is not asserted on empirical grounds: Bacon takes it for granted that species agree *a priori* with reality. In virtue of this postulate, one can immediately infer knowledge of things from the received species<sup>197</sup>.

Bacon endows the species with all optical properties of Alhazen's form or intention. Just like his Arabic master, he does not think of them as bodies<sup>198</sup>, and yet they are material in the same way as luminous rays<sup>199</sup>. With due qualifications, they may be called spiritual, an attribute which can be fully and appropriately predicated only of God, the angels, and the human soul. Indeed, only insofar as it is perceived "per accidens", the species is spiritual, that is "insensibilis"<sup>200</sup>. This applies to the "formae insensatae" as well, that is, to species produced by "qualitates complexionales": they are received, without being 'sensed', by the external senses, and they are grasped only at a later stage by the "aestimatio"<sup>201</sup>. Also the species apprehended by the inner senses are material, and are "insensibiles" insofar as they are unperceived by the external senses.

In order to better appreciate what is the intended domain of this theory of the species, a comparison between Bacon's remarks on the powers of the intellectual soul and his discussion of sensitive

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<sup>196</sup> Cf. *De multiplicatione*, 42; see also p. 6. On p. 26 Bacon remarks that the species of the substance is communicated to, but not grasped by the senses: "Quinque enim sensus particulares et sensus communis (...) non comprehendunt nisi accidentia, quamvis per eos transeant species formarum substantialium." For discussion of the problem how the substantial essence can be known on the basis of (accidental) species, see ch III, § 4.2, ch. IV, § 1.4, § 4.2 and ch IX, § 2.2.

<sup>197</sup> See also *De signis*, eds. K.M. Fredborg, L. Nielsen and J. Pinborg, in *Traditio* 34(1978), 81-136, I.5, p. 83.

<sup>198</sup> Cf. *Opus maius*, pars V, 71-72.

<sup>199</sup> *Opus maius*, pars V, 40-41.

<sup>200</sup> *Opus maius*, pars V, 44: "Cum ergo Aristoteles et Averroes dicunt, quod species habet esse spirituale in medio et in sensu, patet quod non sumitur spirituale a spiritu, nec proprie. Ergo aequivoce et improprie, et hoc est verum. (...) Et quia solum per accidens, ut ex defectu visus et negligentia videndi, possunt aliquando quasi a casu species visibilium percipi quodammodo, ideo non dicuntur visibiles nec sensibiles simpliciter, et nomine absolute."

<sup>201</sup> *Opus maius*, pars V, 8. The different kinds of species are thus determined by the various levels according to which sensible qualities can be distinguished. For the doctrinal background, cf. Avicenna, *Liber de anima*, I.5, 85-86, quoted in ch. I, § 3.2.

powers may be helpful. According to Bacon, the species—a general explanatory principle within the domain of efficient causality—is also operative in the intellectual realm<sup>202</sup>. This does not entail, however, that the process of multiplication of the species continues at the intellectual level, and exerts influence upon conceptualization<sup>203</sup>. Indeed, Bacon's view on this point is akin to Augustine's, who adopted a mechanical model only for the initial stages of sense perception<sup>204</sup>. When Bacon speaks of species present in the rational soul and originating from the "cogitativa", he merely qualifies them as instruments of our soul<sup>205</sup>, without presupposing any abstraction from or impression of these species: as noted above, Bacon maintains that all species are essentially material, whereas the human soul is strictly spiritual.

The species are powers and thus, although differing from corpuscles, they are material entities that are not *intelligible* as such. A possibly abstracted intelligible species is presumably incompatible with the central role assigned by Bacon to innate ideas and divine illumination in intellectual knowledge. A more detailed examination of his views on agent and possible intellects may serve to elucidate this point.

Bacon developed the core of his view of the human soul and of the possible and agent intellects in the period 1240-47, that is, between the completion of the *Quaestiones* and the *Quaestiones alterae* on Aristotle's *Physics* and *Metaphysics*. Initially, evidently basing himself on a doctrine prevailing during the first half of the 13th century, Bacon considers both the agent and potential intel-

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<sup>202</sup> *Opus majus*, pars IV, 111: "Et haec species facit omnem operationem hujus mundi; nam operatur in sensum, in intellectum, et in totam mundi materiam per rerum generationem, (...)."

<sup>203</sup> Tachau, *Vision and Certitude*, 11, argues for this view without, however, providing convincing textual evidence for intelligible species in Bacon; see *ibidem*, note 25. Bacon's reference, in *De multiplicatione specierum*, 2, to Aristotle's intellect as "locus specierum" does not prove that he accepted intelligible species. Indeed, in *Quaestiones supra IV libros Physicorum*, in *Opera hactenus inedita*, vol. VIII, Oxford 1928, p. 2, he invokes Augustine's authority against the intellectual abstraction of species: "Contra sunt multe auctoritates, prima Augustini dicentis 'anima est ad <similitudinem> totius sapientiae procreata species omnium rerum in se gerens' (...)."

<sup>204</sup> See next chapter, § 1.

<sup>205</sup> *Opus maius*, pars V, 9: "Et in homine supervenit ab extrinseco et a creatione anima rationalis, et unitur cogitativae primo et immediate, et utitur ea principaliter sicut suo instrumento speciali, et ab ea fiunt species in anima rationali."

lects as faculties of the human soul—the former being a superior, and the latter an inferior part of the soul<sup>206</sup>. The potential intellect is connected with sensitive powers, and its object is the material thing. The agent intellect, by contrast, does not use sensitive powers: it is directed towards spiritual entities and knows by means of “*exempla sibi innata*”<sup>207</sup>. At a later stage, Bacon separates the agent intellect from the human soul<sup>208</sup>. This move forces Bacon into the previously expounded innatist position, as he also holds that the potential intellect depends on the agent intellect for its knowledge. The potential intellect receives the “*species rerum*” from the agent intellect, and this enables it to grasp the cognitive objects originating from the material or the spiritual realm<sup>209</sup>.

It is remarkable that Bacon’s doctrine of multiplication, which assumes the existence of impressed species (though not impressed like a seal on wax<sup>210</sup>), is almost completely ignored by contemporary authors such as Thomas or Albert in their theories of intelligible species<sup>211</sup>. Not even late 13th-century Masters of Arts, usually more inclined to placing naturalistic accents in the theory of knowl-

<sup>206</sup> Like Albert, Bacon initially considered Averroes as orthodox; cf. A. Thirry, “Recherches relatives aux commentaires médiévaux du *De anima* d’Aristote”, in *Bulletin de philosophie médiévale* 13(1971), 109-128, on p. 116.

<sup>207</sup> *Quaestiones supra XI prime philosophie*, in *Opera hactenus inedita*, vol. VII, Oxford 1926, 15-16, and 110. This innatism of the “*exempla*” is confirmed by *Quaestiones supra IV Physicorum*, cit., 2-3. For the precise function of the “*exempla*”, cf. also *Opera*, vol. VIII, 97.

<sup>208</sup> In *Opus Maius*, II.5, p. 39, Bacon defines the agent intellect as God; cf. also *Opus Tertium*, c. 23, p. 74.

<sup>209</sup> See his commentary on the *Liber de causis*, in *Opera*, vol. XII, Oxford 1935, 71-79, and *Quaestiones super VIII libros Physicorum*, in *Opera*, vol. XIII, Oxford 1935, 7-8, and 10.

<sup>210</sup> See Roger Bacon, *De multiplicatione specierum*, 46: “Ergo non est consimilis actio hinc et inde, ex quo sequitur quod improprie dicitur quod speciei generatio est per viam impressionis, secundum quod utimur hoc nomine prout est impressio in sigillo et huiusmodi. Sic enim ad litteram intelligit vulgus species imprimi ab agentibus, sed non est ita. Si tamen largius accipiatur impressio, prout signat communiter omnem transmutationem patientis per actionem agentis, sicut aliquando inveniuntur auctoritates accipi apud ipsos auctores vel apud interpretes, tunc posset dici quod per impressionem fieret species.”

<sup>211</sup> In contrast, Tachau, *Vision and Certitude*, 31, note 14, conjectures—without textual evidence—that these authors elaborate Bacon’s conceptions into a theory of intelligible species. There are no chronological impediments for this hypothesis, since *De multiplicatione specierum* was written ca. 1260; see Lindberg, “Introduction”. Nonetheless, there are no convincing doctrinal similarities either. For the notion of impressed species, see also the views of Dominicus Gundissalinus and Peter of Spain.

edge, refer to Bacon's views in discussing intelligible species<sup>212</sup>. Furthermore, a striking feature of the later debate is the fact that the hypothesis of an abstracted intelligible species, viewed as impressed upon the intellectual soul, is formulated for the first time by Henry of Ghent, the *inceptor* of the medieval opposition against intelligible species<sup>213</sup>. Evidently, Henry presumes a general consensus among defenders of intelligible species about the doctrine of the multiplication of the species, which developed in the more remote context of Bacon's optical research. In the next chapter<sup>214</sup>, after giving an analysis of Thomas' position, I examine the motives that may have engendered this misconception, which led to conflating the theories of Bacon and Thomas.

### § 3. THOMAS AQUINAS: THE INTELLIGIBLE SPECIES AS FORMAL PRINCIPLE OF INTELLECTUAL KNOWLEDGE

The solution offered by Thomas Aquinas<sup>215</sup> for the problem of the formal mediation in intellective cognition may legitimately be called the 'canonical' theory of intelligible species—touchstone for all subsequent discussions. Thomas puts forward, for the first time in the Middle Ages, a theory of mental representation which is sufficiently complex and complete to bear scrutiny of its own. In this

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<sup>212</sup> Cf. next chapter, § 2.1-2.

<sup>213</sup> Gundissalinus theorized impressed species, but he assigned this impression function to the separate agent intellect; cf. § 1.2. For species impressed upon the intellect, cf. also Bonaventure, *In II Sent.*, d. 17, a. 1, q. 2, ad 4, p. 415 (quoted in § 1.7); from the context of the discussion, one can gather that the intellect, according to Bonaventure, produces the species it receives, rather than being passively affected by the inner senses.

<sup>214</sup> There I will examine the role played by some Augustinian texts in the species dispute from the end of the 13th century.

<sup>215</sup> Thomas Aquinas, ca. 1225—1274; studied with the Benedictines at Monte Cassino in 1231 and then with secular masters at the University of Naples, 1239-44; joined the Dominicans at Naples in 1244; studied in Paris, 1245-48; studied and taught under Albert at Cologne, 1248-52; master of theology at Paris in 1256, where he taught until 1259; spent the next ten years in Italy, where he wrote the first part of his *Summa theologiae*; ordered back to Paris in 1269, where he wrote the second part of the *Summa* and most of his commentaries on Aristotle; died on his way to the Council of Lyon. Chronology of other works: *In IV Sententiarum libros*, 1254-6; *De veritate*, 1256-9; *Summa contra Gentiles*, 1259 (I), 1261-4 (II-IV); *In De anima*, 1260-1272, probably 1267-68 in Rome; *Quaestio de anima*, 1266; *In De causis*, 1269-1272.

respect, Thomas' theory eclipses all its (possible) sources<sup>216</sup>. No longer assimilating the intelligible species to the intelligible form or to the object of intellectual cognition, Thomas offers a fundamentally new interpretation of this notion. Albert already distinguished between species or intention and the form to be known, but he also used the term "species" for the known and stored cognitive content. Moreover, he still presupposed the existence of innate species for the agent intellect<sup>217</sup>. Thomas radically departs from the innatist view of cognitive contents, grounding the content of intellectual cognition in the representational devices produced in the perceptual act, and accepting only a strictly normative innatism in his doctrine of first principles.

The view of the species as formal cognitive principle makes its first appearance in Aquinas' commentary to the *Sentences*<sup>218</sup>. Also in *De veritate*, Thomas presses the need for mediating forms in human knowledge<sup>219</sup>. In these works, however, Thomas seems to be using "(intelligible) form" and the more general "similitude" as interchangeable expressions<sup>220</sup>. The expression "intelligible species" is also used, but intelligible species are not always distinguished from intelligible forms<sup>221</sup>, nor are their precise nature and function examined<sup>222</sup>. The doctrine of intelligible species is developed in more

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<sup>216</sup> The sources of Thomas' doctrine of intelligible species are difficult to pinpoint. Possible sources for his theory of intelligible species include Aristotle, Augustine, Averroes, early thirteenth-century authors, such as Alexander of Hales and Peter of Spain, and certainly Albert the Great.

<sup>217</sup> Also Jean de la Rochelle considered the species as an instrumental concept, but he did not reflect on this specific feature; cf. § 1.4.

<sup>218</sup> *In II Sent.*, dist. 3, q. 3, a. 1, in *Opera omnia*, Parma 1856, t. VI, 422a; cf. dist. 17, q. 1-2. Thomas mentions knowledge "per speciem" also in his discussion of Augustine's distinction between angelic "cognitio matutina" and "cognitio vespertina"; see *In II Sent.*, dist. 12, q. 1, a. 3 and the contemporary *Quodlibetum* IX, q. 4, a. 2. Only from ca. 1250, this issue of knowledge "per species" begins to appear in commentaries to the *Sentences*. It is not treated, in fact, in the *Summa* of William of Auxerre (ca. 1220) and the *Summa halensis*, nor in Albert, who completed his commentary ca. 1249; see Weisheipl, "The life and works of St. Albert the Great", 21 and Albert, *Commentarii in II Sententiarum*, in *Opera*, ed. Borgnet, vol. XXVII, 88-90. The *Summa halensis*, though thematizing the species, does not emphasize their instrumental role; see § 1.4.

<sup>219</sup> *De veritate*, in *Opera omnia*, ed. Leonina, tomus XXII, Romae 1972, q. 10, a. 4.

<sup>220</sup> *De veritate*, q. 10, a. 6c.

<sup>221</sup> *De veritate*, q. 10, a. 8, ad 10.

<sup>222</sup> *De veritate*, q. 10, a. 10, ad 10.

detail in the two *Summae* and in the commentary on *De anima*; it is significantly revised and refined during his second stay in Paris<sup>223</sup>.

In *De veritate*, Thomas sketches the general frame for his cognitive psychology, assigning to sensory images a substantive function in the generation of intellectual knowledge:

(...) mens enim nostra naturali cognitione phantasmata respicit quasi obiecta a quibus species intelligibiles accipit, ut dicitur in III. De anima; unde omne quod intelligit secundum statum viae, intelligit per huiusmodi species a phantasmatibus abstractas.<sup>224</sup>

Here the mind's dependence upon sensible representational devices is described by means of the term "accipere"<sup>225</sup>. This indicates that the envisaged dependence does not entail that sensible images are capable of *impressing* something on the human mind, as is erroneously claimed by many later critics of the species doctrine. Thus, though not characterized in terms of a physical alteration, the impact of sense perception on the generation of intellectual cognition is crucial for the content of the latter.

Many studies on Thomas' psychology underestimate the novelty of his view of the relation between mind and sensible reality as compared to the philosophical milieu of his days. Even authors with broad scientific interests, such as Roger Bacon and Robert Grosseteste, placed severe limitations on the effects of sense perception at the level of the intellect<sup>226</sup>. In contrast to them, Thomas coherently regards the "esse naturale" as a foundation for both "esse sensibile" and "esse intelligibile"<sup>227</sup>. Accordingly, in his reflections on human knowledge, Thomas squarely endorses Aristotle's *non sine phantasmate*—namely, without formulating Augustinian-like restrictions.

In analyzing Thomas' theory of species, I proceed as follows. Subsection 1 illustrates the general features of the species *qua* instrumental principle. Subsection 2 is devoted to the nature and

<sup>223</sup> B. Bazán, "La dialogue philosophique entre Siger de Brabant et Thomas d'Aquin", in *Revue philosophique de Louvain* 72(1974), 53-155, on p. 99.

<sup>224</sup> *De veritate*, q. 10, a. 11c.

<sup>225</sup> See also *De veritate*, q. 10, a. 4 and a. 6.

<sup>226</sup> Cf. the preceding sections.

<sup>227</sup> Thomas Aquinas, *In Aristotelis librum De anima*, II, lectio VII, 310.

function of the sensible species<sup>228</sup>. The role of the agent intellect and the first principles contained in its light are analyzed in subsections 3 and 4. Subsection 5 is devoted to an overall critical discussion.

### 3.1. *Intentionality*

According to Thomas, the human soul is capable of accessing sensible external objects. This intentional relation takes place through a series of mediating processes, both in sense perception and in intellectual knowledge<sup>229</sup>. In particular, sensible and intelligible species play a pivotal role in mediating the effective assimilation of soul and extra-mental reality<sup>230</sup>. By describing the species as resulting from the synergy of intellect and sensible reality, Thomas attempts to provide a foundation for the universality *and* the objectivity of intellectual knowledge<sup>231</sup>.

The intelligible species is characterized as “quo intelligitur”. It is not a “quod intelligitur”, because scientific knowledge concerns *res*, rather than species or intentions<sup>232</sup>. Moreover, if species were

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<sup>228</sup> An analysis of nature and function of sensible species in Thomas may throw light on the crucial role of the theory of participation as metaphysical frame for the doctrine of intelligible species. In later authors, the analysis of intelligible species can be more easily detached from their view of sensible species.

<sup>229</sup> Cf. already, *In II Sent.*, dist. 17, q. 1, a. 1. For discussion of the doctrine of intentionality in Thomas: A. Hayen, *L'intentionnel dans la philosophie de Saint Thomas*, cit.; P. Sheenan, “Aquinas on intentionality”, in *Aquinas: A Collection of Critical Essays*, ed. A. Kenny, London 1969, 307-321; A.J. Lisska, “Axioms of intentionality in Aquinas' theory of knowledge”, in *International Philosophical Quarterly* 16(1976), 305-322; D. Flipper, “Immanence and transcendence in human knowledge: The illumination of a problem in St. Thomas”, in *New Scholasticism* 53(1979), 325-346.

<sup>230</sup> *Summa theologiae*, I, q. 84, a. 3c: “Unde oportet dicere quod anima cognoscitiva sit in potentia tam ad similitudines quae sunt principia sentiendi, quam ad similitudines quae sunt principia intelligendi.”

<sup>231</sup> See *De veritate*, q. 10, a. 4, in c; *Summa theologiae*, I, q. 79, 84 and 85. Thomas rejects Plato's separate intelligible species in: *De substantiis separatis*, IV, 61; *Summa theologiae*, I, q. 84, a. 4; and in *In De anima*, III, lectio VIII, 705, and lectio XII, 784. Notice that Thomas still uses Cicero's translation of the Platonic “idea” with “species”; cf. *In VIII libros Physicorum Aristotelis expositio*, II, lectio 5, 179; see also ch. I, § 4.1.

<sup>232</sup> *In De anima*, III, lectio VIII, 718: “Manifestum est enim quod scientiae sunt de his quae intellectus intelligit. Sunt enim scientiae de rebus, non autem de speciebus, vel intentionibus intelligibilibus, nisi sola scientia rationalis. Unde manifestum est, quod species intelligibilis non est obiectum intellectus, sed quidditas rei intellectae”; *Summa contra Gentiles*, I, c. 46, 391. The *scientia rationalis* Thomas refers to is logic,



the primary objects of knowledge, the human mind would only know its own 'passions'<sup>233</sup>. Already in his comment to the *Sentences*, Thomas remarks that whenever the species is taken as (subsidiary) object of the intellect, one can get to know only some of its very general characteristics, namely, that it is intelligible, universal, etc<sup>234</sup>.

The species is not an idle intermediate entity between sensible phantasms and intellect, for it presents the object to the intellect in a proportionate fashion<sup>235</sup>. Phantasm and intelligible species have the same formal structure. Thomas is careful, however, to point out that the intelligible representation of the mind's object is not merely a replica of sensible representational devices<sup>236</sup>. The crucial difference between phantasm and intelligible species—as we shall see more in detail below—boils down to the idea that the latter is capable of representing a sensible essence as universal with the help of the agent intellect. Now, the species contains as "similitudo" the thing itself, that is, the species is an intentional representation of the essence in its fundamental features. This is the main reason why we may come to know sensible reality in its intelligible structure, and not just an image of it<sup>237</sup>.

By characterizing the species as formal principle, and not as object of intellectual knowledge, Thomas is adapting to his needs the Arabic doctrine of intention. The "intentio rei intellecta" is de-

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which regards second intentions. Only in reflective knowledge the species are (secondary) objects; see also *Summa contra Gentiles*, II, c. 7, 1550.

<sup>233</sup> *Summa theologiae*, I, q. 85, a. 2.

<sup>234</sup> *In II Sent.*, dist. 12, q. 1, a. 3.

<sup>235</sup> Cf. D.L. Black, "The influence of the *De divinis nominibus* on the epistemology of St. Thomas Aquinas", in *Proceedings of the PMR Conference* 10(1985), 41-52, for the crucial role of this principle in Thomas' criticisms of the Platonic philosophy.

<sup>236</sup> Cf. also K. Rahner, *Geist in Welt. Zur Metaphysik der endlichen Erkenntnis bei Thomas von Aquin*, Münster 1957 (second edition), 152 on the difference between sensible and intellectual object.

<sup>237</sup> *Summa contra Gentiles*, III, c. 49, 2268: "Omnis intelligibilis species per quam intelligitur quidditas vel essentia alicuius rei, comprehendit in repraesentando rem illam". Cf. *De veritate*, q. 2, a. 5, ad 17um: "Ad septimum decimum dicendum quod hoc modo aliquid cognoscitur secundum quod est in cognoscente repraesentatum et non secundum quod est in cognoscente existens: similitudo enim in vi cognoscitiva existens non est principium cognitionis rei secundum quod habet in potentia cognoscitiva sed secundum relationem quam habet ad rem cognitam; et inde est quod non per modum quo similitudo rei habet esse in cognoscente res cognoscitur sed per modum quo similitudo in intellectu existens est repraesentativa rei."

scribed as "ratio rei, quam significat definitio"<sup>238</sup>; in other words, the object as it is eventually grasped by the intellect. Thus, intention is what is grasped in a concept: it is *terminus* rather than *principium* of intellectual knowledge<sup>239</sup>. This distinction is crucial to Thomas' argument against Avicenna's doctrine of emanation, which excludes a real function of sensory images in intellectual abstraction<sup>240</sup>. It also plays a central role in his criticisms of Averroes' noetics, which *de facto* discards any distinction between *quo* and *quod* in intellectual knowledge<sup>241</sup>. Thomas splits up the Averroist intention into a formal representational principle and a concept, the latter expressing (propositionally) the content of our knowledge. At the same time, however, Thomas does not refrain from calling the "intentiones intellectae" of Averroes "species intelligibiles", thus inviting many misunderstandings<sup>242</sup>.

<sup>238</sup> *Summa contra Gentiles*, I, c. 53, 443; this intention is stored; in this way Thomas accounts for knowledge of things when they are not present. This conception is developed in overt polemics with Avicenna; cf. also *In De anima*, III, lectio VIII, 701-703.

<sup>239</sup> *Summa contra Gentiles*, I, c. 53, 444: "Haec autem intentio intellecta, cum sit quasi terminus intelligibilis operationis, est aliud a specie intelligibili quae facit intellectum in actu, quam oportet considerari ut intelligibilis operationis principium: licet utrumque sit rei intellectae similitudo." Cf. W.E. Carlo, "Idea and concept: A key to epistemology", in *The Quest for the Absolute*, ed. F. Adelman, Boston-The Hague 1966, 47-66. Most authors before Thomas used "intention" and "species" interchangeably.

<sup>240</sup> Cf. *Summa contra Gentiles*, II, c. 74; see P. Lee, "St. Thomas and Avicenna on the agent intellect", in *Thomist* 45(1981), 41-61, on p. 51.

<sup>241</sup> *Summa contra Gentiles*, II, c. 75, 1550.

<sup>242</sup> Cf. *In De anima*, III, lectio VII, 691-4. According to Thomas, Averroes' characterization of intelligible species makes any real relation between intellect and phantasm superfluous, and provides at most a foundation for knowledge of phantasms by separate intellects. In *idem*, 692 he draws a picture of the mental act in which the species do not fit any longer Averroes' doctrine of the unique possible intellect connected with man by intelligible species: "Species igitur intelligibilis non est forma intellectus possibilis, nisi secundum quod est intelligibilis actu: non est autem intelligibilis actu, nisi secundum quod est phantasmatis abstracta et remota. Manifestum est igitur, quod secundum quod unitur intellectui, est remota a phantasmatis. Non igitur intellectus per hoc unitur nobiscum." One must recall, however, that the Latin Averroes did use the term "intelligible species", cf. ch. I, § 3.3. Therefore, it is not correct to presume, as B. Bazán did, "*Intellectum Speculativum*: Averroes, Thomas Aquinas, and Siger of Brabant on the intelligible object", in *Journal of the History of Philosophy* 19(1981), 425-446, on p. 432, that Thomas identifies the Averroistic notion of "intellectum speculativum" with his "species intelligibilis". Medieval Averroistic authors generally accept the doctrine of *species intelligibilis*, (cf. ch. III, § 2, and ch. IV, § 4 for Jandun and his school), tracing this doctrine with no hesitation whatsoever into the works of Averroes himself. The same theory will no longer be accepted as self-evident by Renaissance Peripatetic authors; some reject the Averrois-

### 3.2. *Sensible species*

A remarkable feature of Thomas' construction is the complete symmetry between sense perception and intellectual knowledge, achieved by distinguishing in both stages between *quod* and *quo*. These were simply identified at the level of intellectual knowledge by Averroes and Avicenna, as well as by early 13th-century authors up to Bonaventure<sup>243</sup>. A proper understanding of this turn in psychological theorizing calls for a close analysis of the specific contribution of senses and intellect in the production of intelligible species.

In its contact with external reality, the human soul grasps the sensible object in its formal structure, that is, in its "esse spirituale" or "intentionale"<sup>244</sup>. The senses are ontologically distinguished from the intellect: as regards their internal structure, they already are actual powers, whereas they are "in potentia" only in relation with the external world<sup>245</sup>. The senses, connected to and organized into physiological structures, are considered *in se* as "in primo actu", and thus are not purely passive in their relation to sensible reality. Hence, perception is an intentional and causal transaction between soul and reality<sup>246</sup>. Actual perception depends on sensible species, that is, on the external object inasmuch as it affects the

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tic basis of the "species intelligibilis", like Nifo or Girelli, others defend it as integral part of the Commentator's teachings, like Marcantonio Zimara, see ch. VI-VII.

<sup>243</sup> According to B. Bazán, "*Intellectum Speculativum*", 432, Averroes endorses a more immediate form of realism; cf. idem, 432-6 for discussion of the relation Averroes-Thomas.

<sup>244</sup> See *In De anima*, I, lectio X, 159, and II, lectio XXIV, 553. For the Arabic-Stoic origin of this term, cf. Gauthier, "Préface" in *Sentencia libri de anima*, 225\*-226\* (quoted in ch. I, § 1.4.2).

<sup>245</sup> *In De anima*, II, lectio XII, 374: "Hoc est ergo quod dicit, quod prima mutatio sensitivi fit a generante. Manifestum autem primam mutationem, quae est de pura potentia in actum primum ducens. Haec autem mutatio fit a generante; nam per virtutem, quae est in semine, educitur anima sensitiva de potentia in actum cum omnibus suis potentiis." The intellect, in turn, requires the intelligible species for its first act. Once received, they form the "habitus scientiae"; cf. *Summa contra Gentiles*, II, c. 73, 1526. The first act ("scientia") enables the intellect to perform "consideratio"; *Summa contra Gentiles*, I, c. 45, 385. Duns Scotus, instead, will consider the intelligible species as first act and the intellection as second act; cf. ch. IV, § 1.1.

<sup>246</sup> Cf. *In De anima*, II, lectio XXIV, 553.

medium and the sense organs<sup>247</sup>. Sensible species are brought about by an action of bodies, inasmuch as they participate in a mode of action proper to separate substances<sup>248</sup>. The multiplication of species is replaced by a communication of species, to be understood in the context of Thomas' participation doctrine.

The species should not be thought of as a pictorial image; rather it represents that characteristic feature of sensible things, which grounds the act of sense perception<sup>249</sup>: it is an effect of the thing communicating itself according to its formal structure<sup>250</sup>. This general view entails that the species in sensation is an instrumental principle, rather than the perceptual object itself<sup>251</sup>. Once received in our soul, it enables us to construct a sensory image or representation, that is, the phantasm.

Sense perception is a complex process involving several intermediate stages. In virtue of its formal structure, a sensible thing participates in the operation of celestial bodies, and is thus able to communicate its essential features, as sensible species, to the medium and the sense organs. When the species are assimilated by the sense organs, this causal process reaches a level which may be

<sup>247</sup> As in Aristotle, the sense organ is the sense in its materiality; for discussion, see G. Siewert, *Die Metaphysik der Erkenntnis nach Thomas von Aquin*, Darmstadt 1968 (first edition: Münster-Berlin 1935), 72.

<sup>248</sup> Cf. *De potentia*, q. 5, a. 8: "Haec autem est actio corporis, quae non est ad transmutationem materiae, sed ad quamdam diffusionem similitudinis formae in medio secundum similitudinem spiritualis intentionis quae recipitur de re in sensu vel intellectu; et hoc modo sol illuminat aerem, et color speciem suam multiplicat in medio. Uterque autem modus actionis in istis inferioribus causatur ex corporibus caelestibus." Thomas develops in this passage a view similar to the doctrine of universal force in Alkindi, which, originating in the Neoplatonic doctrine of emanation, was proposed already by Grosseteste and Roger Bacon.

<sup>249</sup> As is rightly underscored by G. Siewerth, *Die Metaphysik der Erkenntnis nach Thomas von Aquin*, 58, 42, and K. Rahner, *Geist in Welt*, 59, 109.

<sup>250</sup> Some points remain problematic in Thomas' account of sense perception by sensible species: 1. How does the species represent the material object? 2. How is the production of species in the medium to be more precisely understood? 3. How does sensible species 'penetrate' or affect the sense organs?

<sup>251</sup> I disagree with G. Siewerth, *Die Metaphysik der Erkenntnis nach Thomas von Aquin*, cit., 61 who characterizes the *species sensibilis* as the known object; more appropriate is the definition on p. 63: "das Wirken der Dingform in der Immanenz des Wahrnehmens selbst". Siewerth correctly states that the senses grasp the 'eidetic' structure of the sensible object rather than a representative image of it, but this does not mean that the species is the object itself (p. 58). A first critique of Siewerth is offered by K. Rahner, *Geist in Welt*, 101, who observes that Siewerth does not do justice to the parallelism between senses and intellect in Thomas. See also *Summa contra Gentiles*, II, c. 75, 1550.

called sensation. The full actualization of the physiological structures of the senses enables the human soul to construct a representational device called phantasm. The phantasm, in turn, enables the agent intellect to produce the intelligible species.

### 3.3. *Illumination and abstraction*

According to Thomas, the agent intellect is the capacity for producing representations, which is a necessary condition for conceptualization. Its activity is not merely episodic or fragmentary, because it consists in a long-term capacity to isolate certain intelligible or cognitive contents triggering the acts of the possible intellect<sup>252</sup>. As in Averroes, the central function of the agent intellect is to *actualize* intelligibles. Also its various operations, such as illumination of phantasms and abstraction of species<sup>253</sup>, must be understood in terms of the constructive capabilities of this intellect<sup>254</sup>.

Thomas regards the intelligible species as the ‘result’ of the agent intellect’s “*conversio supra phantasmata*”. This “*conversio*” unfolds itself into an illumination and an abstraction (or production). The abstraction of the intelligible species does not involve any transfer of forms from the phantasy to the possible intellect<sup>255</sup>. Furthermore, it is most likely that Thomas did not regard illumination and abstraction as (temporally) distinct stages in the production of intellectual cognition; the former, however, is a necessary condition for the latter:

Ad quantum dicendum quod phantasmata et illuminantur ab intellectu agente; et iterum ab eis, per virtutem intellectus agentis, species intelligibiles abstrahuntur. Illuminantur quidem, quia, sicut pars sensitiva ex coniunctione ad intellectivam efficitur virtuosior, ita phantasmata ex virtute intellectus agentis redduntur habilia ut ab eis intentiones intelligibiles abstrahantur. Abstrahit autem intellectus

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<sup>252</sup> A. Kenny, “Intellect and imagination in Aquinas”, in *Aquinas: A Collection of Critical Essays*, 273-296, on pp. 279-81; cf. *Summa contra Gentiles*, III, c. 42, 2197, where Aquinas defines *intelligere* as a *virtus*.

<sup>253</sup> Initially, in *De veritate*, q. 10, a. 8, ad 10, Thomas does not speak of abstraction of intelligible species, but of the process of making species intelligible.

<sup>254</sup> Cf. *Summa theologiae*, q. 79, a. 3: the agent intellect actualizes the intelligibles “per abstractionem specierum intelligibilium”.

<sup>255</sup> *Summa theologiae*, I, q. 85, a. 1, ad 3um. In contrast, Giles of Rome and many masters of arts will assign a more substantive function to the phantasm in the production of intelligible species; cf. ch. III, § 2.3.

agens species intelligibiles a phantasmatibus, inquantum per virtutem intellectus agentis accipere possumus in nostra consideratione naturas specierum sine individualibus conditionibus, secundum quarum similitudines intellectus possibilis informatur.<sup>256</sup>

In his view of the relation between illumination and abstraction in the production of intellectual cognition, Thomas tries to strike a balance between, on the one hand, the impact of the phantasms, which are necessary to ensure the objective reference of the contents of knowledge, and on the other hand the active processing of these sensory images by the agent intellect. Already in the *De veritate*, he stresses the fact that mind *accepts* ("accipit") science, while cognitive similitudes are *produced* ("format") by the mind itself<sup>257</sup>. In this same work, however, he grants that the illuminated phantasms can move the possible intellect—thereby implicitly suggesting that any abstraction of intelligible species would be superfluous<sup>258</sup>. All ambiguities in the illumination of the phantasms seem to be resolved by the passage of the *Summa theologiae* quoted above: phantasms are no longer viewed as capable of moving the possible intellect<sup>259</sup>; the cognitive content of sensory images is abstracted by the active mind and received as form by the possible intellect.

More persistent difficulties concern the relation between illumination and abstraction<sup>260</sup>. By characterizing the former as a necessary condition of the latter, Thomas introduces a logical order that threatens the coherence of the intellectual act<sup>261</sup>. Presumably, however, this tension is endemic in any cognitive psychology which postulates an agent intellect manipulating representational devices embedded in material organs. It is not surprising, then, that Thomas

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<sup>256</sup> *Summa theologiae*, I, q. 85, a. 1, ad 4um. The notion of the agent intellect as engendering "universalitatem in rebus" is derived from Averroes; cf. ch. I, § 3.3. See in this context also P. Geach, *Mental Acts: Their Content and Their Object*, London-N.Y. 1960 (2nd edition), 18 and 130f: the notion of abstraction in Thomas does not imply that our concepts arise from a selection of data on the basis of direct sensible experience.

<sup>257</sup> *De veritate*, q. 10, a. 6 in c: "Et secundum hoc est quod scientiam mens nostra a sensibilibus accipit; nihilominus tamen ipsa anima in se similitudines rerum format in quantum per lumen intellectus agentis efficiuntur formae a sensibilibus abstractae intelligibiles actu, ut in intellectu possibili recipi possint."

<sup>258</sup> *De veritate*, q. 10, a. 6, ad 8um.

<sup>259</sup> A conflicting thesis is frequently formulated by later authors.

<sup>260</sup> For other problems, cf. subsection 5.

<sup>261</sup> See, for instance, Duns Scotus' position, discussed in ch. IV, § 1.1.

slurs hastily over the illumination of phantasms—a vagueness that led future generations to try out various solutions to the problem of what the agent intellect really ‘does’ with sensory images<sup>262</sup>.

### 3.4. *The a priori of the human mind*

Like the species, the agent intellect is a *quo*<sup>263</sup>: its *lumen* provides the *a priori* structure of the human mind<sup>264</sup>. This *a priori* cannot be interpreted in terms of innate contents, because Thomas rejects the view that the agent intellect is a “habitus principiorum”<sup>265</sup>. It should rather be seen as the productivity of the human mind, since the agent intellect is capable of reconstructing, though only virtually, the essential structure of material reality in virtue of the first principles it contains<sup>266</sup>.

The “prima principia” of human knowledge may be thought of as present in the intellect only in the sense that the intellect can produce them when encountering sensible reality<sup>267</sup>. The first principles enable man to “touch” the divine truth in which they participate<sup>268</sup>. Indeed, by virtue of the “lumen intellectus agentis”, our

<sup>262</sup> Cf. ch. III and IV and ch. VII, § 2.

<sup>263</sup> *Summa contra Gentiles*, II, c. 78, 1590.

<sup>264</sup> This connects Thomas with Albert: the agent intellect is source of intelligibility. Thomas, however, does not conceive of the agent intellect as possessing species or forms; its light has a strictly normative function; cf. on this conception K. Hedwig, *Sphaera lucis*, cit., 207; K. Rahner, *Geist in Welt*, 222, and 315–21.

<sup>265</sup> *In De anima*, III, lectio X, 729.

<sup>266</sup> The supposition that it contains the actual determinations of the intelligibles would make phantasms totally superfluous. *In De anima*, III, lectio X, 739, and lectio XIII, 794. Cf. *Summa theologiae*, I, q. 84, a. 3–4.

<sup>267</sup> *De veritate*, q. 11, a. 1, resp. The “prima principia” are also called “primae conceptiones”; cf. *De veritate*, q. 11, a. 1, ad resp. See also *In XII libros Metaphysicorum Aristotelis expositio*, IV.6.599: first principles are not formed in abstraction; *Summa contra Gentiles*, I, c. 56, 478: one knows the first principles “absque ratiocinatione”. Averroes posited first principles in the material intellect; cf. *In De anima*, 407 and 496f.

<sup>268</sup> Their function is, however, principally instrumental, see *De veritate*, q. 1, a. 4, ad 5um: “Ad quantum dicendum quod veritas secundum quam anima de omnibus iudicat, est veritas prima: sicut enim a veritate intellectus divini effluunt in intellectum angelicum species rerum innatae, secundum quas omnia cognoscunt, ita a veritate intellectus divini procedit exemplariter in intellectum nostrum veritas primorum principiorum, secundum quam de omnibus iudicamus; et quia per eam iudicare non possumus nisi secundum quod est similitudo primae veritatis, ideo secundum veritatem dicimus de omnibus iudicare.” Cf. *Summa contra Gentiles*, III, c. 47, 2245: the human mind is like a mirror of God. See also *Summa theologiae*, I, q. 84, a. 5 and *Quodlibetum* X, q. 4, a. 1.

soul is connected to the "rationes aeternae"<sup>269</sup>, and this in turn means that the human soul owes its "virtus intelligendi" to a higher intellect, namely, to God<sup>270</sup>. This *lumen* is an innate capacity which does not entail *actual* cognition of first principles<sup>271</sup>; for this reason, the latter are usually referred to by Thomas as *indita* rather than as *innata*<sup>272</sup>. Since the first principles virtually include all possible knowledge, however, the (possible) intellect knows all things potentially<sup>273</sup>. The potentiality of the intellect is accidental: mental acts depend on sensory images only in their content.

The non-essential potentiality of the intellect is consistent with the idea that intelligible species are produced by and in the intellect<sup>274</sup>. This solution has the advantage of avoiding an undesirable transfer of accidents from one subject to another. The intellect remains responsible for the formal elaboration of knowledge, whereas only the objective reference of cognitive contents as such depends upon sensory images<sup>275</sup>.

<sup>269</sup> *Summa theologiae*, I, q. 84, a. 5.

<sup>270</sup> *Summa theologiae*, I, q. 79, a. 4; *Summa contra Gentiles*, I, c. 68, 570 and II, c. 77, 1584; *De substantiis separatis*, c. XIV, 127; *Quaestio de spiritualibus creaturis*, a. 10; *Quodlibetum* X, q. 4, a. 7c. See also J. Mundhenk, *Die Seele im System des Thomas von Aquin. Ein Beitrag zur Klärung und Beurteilung der Grundbegriffe der Thomistischen Psychologie*, Hamburg 1980, Anhang II.

<sup>271</sup> Cf. *Quaestio disputata de anima*, a. 5: the agent intellect is *cause* of the "habitus principiorum".

<sup>272</sup> *Summa theologiae*, I, q. 79, a. 12c; see also H. Seidl, "Über die Erkenntnis erster, allgemeinen Prinzipien nach Thomas von Aquin", in *Thomas von Aquin. Werk und Wirkung im Licht neueren Forschungen*, ed. A. Zimmermann, Berlin-New York 1988, 103-116, on p. 113.

<sup>273</sup> In *De anima*, II, lectio XI, 372: "Homo enim per lumen intellectus agentis, statim cognoscit actu prima principia naturaliter cognita; et dum ex eis conclusiones elicit, per hoc quod actu scit, venit in actualem cognitionem eorum quae potentia sciebat"; *De veritate*, q. 11, a. 1, resp., p. 350b-351a: "(...) similiter etiam dicendum est de scientiae acquisitione quod praexistunt in nobis quaedam scientiarum semina, scilicet primae conceptiones intellectus quae statim lumine intellectus agentis cognoscuntur per species a sensibilibus abstractas (...) in istis autem principiis universalibus omnia sequentia includuntur sicut in quibusdam rationibus seminalibus; quando ergo ex istis universalibus cognitionibus mens educitur ut actu cognoscat particularia quae prius in universali et quasi in potentia cognoscebantur, tunc aliquis dicitur scientiam acquirere."

<sup>274</sup> The ontological "thickness" of the possible intellect was already stressed by Theophrastus (cf. ch. I, § 2); a similar view was encountered in the anonymous author discussed in § 1.4 of this chapter, and it will be defended also by Godfrey of Fontaines, James of Viterbo, and others.

<sup>275</sup> See the positions of Peter of Spain and Albert.



### 3.5. Intellectual knowledge of concrete reality

Sense perception, in Thomas' view, is "materia causae" of intellectual knowledge<sup>276</sup>. The agent intellect, which 'constructs' its own objects, represents the essential structure of material things as cognitive objects<sup>277</sup>. Abstraction is not an *unveiling*; it is an *actualization* or determination of the intelligible potential of sensible contents. Illumination consists in assigning a higher actuality to these contents, such that the agent intellect makes available the essential structure of sensory representations. Therefore, cognition is an "assimilatio activa"<sup>278</sup>: in producing intelligible species, the agent intellect is the efficient cause of a formal specification<sup>279</sup>. Its productivity consists in transforming sensory representational structures into cognitive representations<sup>280</sup>, and this explains why sometimes its object is characterized as phantasm<sup>281</sup>, but on other occasions as "ens intelligibile"<sup>282</sup> or "quidditas rei"<sup>283</sup>. Indeed, the active intellect is causally directed at the phantasm whenever it produces intelligible species, and thus the phantasm is its object; what is known through this act, however, is the "quidditas rei"—that is, the intelligible essence of a sensible thing<sup>284</sup>.

Thomas' conceptual construction poses a number of questions. How are material objects known as concrete beings in sensible

<sup>276</sup> *Summa theologiae*, I, q. 84, a. 6.

<sup>277</sup> *Summa theologiae*, I, q. 79, a. 3; Cf. Averroes, *In De anima*, 12: "(...) sed intellectus est qui agit in eis universalitatem."

<sup>278</sup> *In De anima*, III, lectio X, 739: "Comparatur igitur ut actus respectu intelligibilium, in quantum est quaedam virtus immaterialis activa, potens alia similia sibi facere, scilicet immaterialia."

<sup>279</sup> *De veritate*, q. 20, a. 2, ad 5: "Quod enim intellectus agens habitu non indigeat ad suam operationem ex hoc contingit quod intellectus agens nihil recipit ab intelligibilibus sed magis suam formam eis tribuit faciendo ea intelligibilia actu." See also B. Bazán, "La dialogue philosophique entre Siger de Brabant et Thomas d'Aquin", cit., 125.

<sup>280</sup> With a daring translation of Thomas' cognitive psychology into a modern terminology, one might say that the agent intellect digitalizes the rich, but analog information of sense perception. See F. Dretske, *Knowledge and the Flow of Information*, Cambridge (Ma.) 1981.

<sup>281</sup> *Summa contra Gentiles*, II, c. 96, 1813.

<sup>282</sup> *Summa contra Gentiles*, II, c. 96, 1835.

<sup>283</sup> *In De anima*, III, lectio VIII, 705.

<sup>284</sup> Cf. *In De anima*, I, lectio VIII, 116. In the 16th century, Francisco Toletus will define the phantasm as "obiectum motivum" and the sensible essence as "obiectum terminativum"; cf. *Commentaria Unà cum Quaestionibus, In tres libros Aristotelis De anima*, 135rb.

reality if they are known by means of dematerialized formal principles? Is knowledge of external reality reduced to an extreme and ineffectual abstraction, incapable of assimilating material things? And finally, what is the ontological status of the species? Are they singular or universal, accidental or substantial, and which type of knowledge do they mediate<sup>285</sup>?

Thomas characterizes the species as a similitude, because, as a mediating principle, it refers to the thing it is the likeness of<sup>286</sup>. Now, if the complete cognitive content of our concepts depends on the intelligible species, then, in the case of material objects, the very property of being material must somehow be included in the species, for otherwise the similitude would not be perfect. If this is the case, however, how can one distinguish between a 'material' *species intelligibilis* and the phantasm<sup>287</sup>? Thomas tries to settle this question by distinguishing between two states of the species as it is received in the intellect. On the one hand, it is a reality in itself, which is particular and individual, while, on the other hand, it is a similitude, which is universal. Therefore, Thomas claims, the species as individual entity is capable of providing universal knowledge: it is singular and accidental in itself, but it also enables the human intellect to attain knowledge of universal essences.

It would be incorrect to say that the species is an abstract entity because of its universality, since the latter feature merely indicates that the species expresses an essence common to a plurality of individuals<sup>288</sup>. And indeed, it is the material character of things (rather

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<sup>285</sup> *In De anima*, II, lectio XII, 377: "et inde est, quod sensus cognoscit singularia, intellectus vero universalia"; cf Aristotle, *De anima*, 417b20f. The ontological status of intelligible species will remain a thorny problem for generations to come.

<sup>286</sup> See also *De veritate*, q. 10, a. 4c and a. 6, ad 7um. It is evident that this similitude is postulated rather than demonstrated on the basis of previously made assumptions.

<sup>287</sup> The superfluity of the intelligible species with respect to an illuminated phantasm will become one of the most frequent charges against the species doctrine.

<sup>288</sup> *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um: "species intellecta potest dupliciter considerari: aut secundum esse quod habet in intellectu, et sic habet esse singulare; aut secundum quod est similitudo talis rei intellectae, prout ducit in cognitionem eius, et ex hac parte habet universalitatem: quia non est similitudo hujus rei secundum quod haec res est, sed secundum naturam in qua cum aliis suae species convenit. Nec oportet omne singulare esse intelligibile tantum in potentia, sicut patet de substantiis separatis, sed in illis quae individuatur per materiam, sicut sunt corporalis: sed species istae individuatur per individuationem intellectus; unde non perdunt esse intelligibile in actu (...)"'. Thomas' talk of an intellectured species, in this early work, clearly suggests,

than their individuality) that hinders actual intelligibility<sup>289</sup>. This is the reason why Thomas emphasizes that the human soul knows the *essences* of material things, and being material is of the essence of the things we know. The intellect abstracts from material aspects of things to be known. The species of man, for example, includes matter, flesh and bones, but does not denote this flesh and these bones<sup>290</sup>. Thinking, therefore, is essentially “*conversio ad phantasmata*”, that is, the grasping of concrete reality in abstraction<sup>291</sup>.

### 3.6. Conclusion

The metaphysical framework of Thomas’ doctrine of the intelligible species is constituted by his theory of participation, which eliminates any radical cleavage between the material and spiritual realms, as well as between the ideas of mental receptivity and activity; according to his view of the active potentiality of the intellect, there is no absolute passivity or autonomous spontaneity<sup>292</sup>.

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that he does not conceive of the species as the first known, but refers to its being *received* by the intellect. On the rather imprecise character of the distinction between intelligible forms and species in early works such as the commentary on the *Sentences* and the *De veritate*, see *supra*.

<sup>289</sup> Cf. *Summa theologiae*, I, q. 86, a. 1, ad 3um and *Summa contra Gentiles*, II, c. 75, 1553: “Nec propter hoc oportet quod, si species intelligibiles sint plures numero et eadem specie, quod non sint intelligibiles in actu, sed potentia tantum, sicut alia individua. Non enim hoc quod est esse individuum, repugnat ei quod est esse intelligibile actu: (...) Sed id quod repugnat intelligibilitati est materialitas: cuius signum est quod, ad hoc quod fiant formae rerum materialium intelligibiles actu, oportet quod a materia abstrahantur. Et ideo in illis in quibus individuatio fit per hanc materiam signatam, individuata non sunt intelligibilia actu. Si autem individuatio fiat non per materiam, nihil prohibet ea quae sunt individua esse actu intelligibilia. Species autem intelligibiles individuantur per suum subiectum, qui est intellectus possibilis, sicut et omnes aliae formae.” On the accidental character of the species, see *Summa contra Gentiles*, I, c. 46, 392 and D. Flipper, “Immanence and transcendence in human knowledge: The illumination of a problem in St. Thomas”, 342.

<sup>290</sup> *Summa theologiae*, I, q. 85, a. 1c and ad 2um; for discussion, cf. P. Lee, “St. Thomas and Avicenna on the agent intellect”, 58-60.

<sup>291</sup> See *Summa theologiae*, I, q. 84, a. 7; q. 85, a. 1, ad 5um; and *Summa contra Gentiles*, I, c. 30, 277: “Intellectus autem noster, ex sensibus cognoscendi initium sumens, illum modum non transcendit qui in rebus sensibilibus invenitur, in quibus aliud est forma et habens formam, propter formae et materiae compositionem. Forma vero in his rebus invenitur quidem simplex, sed imperfecta, utpote non subsistens: habens autem formam invenitur quidem subsistens, sed non simplex, immo concretionem habens. Unde intellectus noster, quicquid significat ut subsistens, significat in concretionem”; see K. Rahner, *Geist in Welt*, 138 and 153.

<sup>292</sup> Cf. *De veritate*, q. 11, a. 1, resp., p. 351: “Scientia ergo praeexistit in addiscente in potentia non pure passiva sed activa, alias homo non posset per se ipsum acquirere

Knowledge is the result of the interplay between the human mind and sensible reality. The lower, material entities possess a "potentia operativa" that transcends them<sup>293</sup>, and the human soul has the capacity to assimilate their essence. The mind abstracts and receives the species from the senses. Their ultimate origin, however, is the divine light, giving rise to the "lumen intellectus agentis" which produces them effectively<sup>294</sup>. Although the various modes of being for intellect, species and object may change, they are identical with respect to their formal structure in the cognitive act. Hence, according to Thomas, man does not know a deformed, 'spiritualized' object: he is capable of grasping the intelligible structure of sensible objects, for material beings naturally tend toward an "esse spirituale"—in the same way the human mind is capable of containing more forms than just its own<sup>295</sup>.

In his doctrine of the *species intelligibiles*, Thomas tries to find a balance between receptivity and activity in human knowledge. The intellect receives the species, but these are not impressed:

Ad septimum dicendum quod in receptione qua intellectus possibilis species rerum accipit a phantasmatibus, se habent phantasmata ut agens instrumentale vel secundarium, intellectus vero agens ut principale et primum; (...) et ideo intellectus possibilis recipit formas ut intelligibiles actu ex virtute intellectus agentis, sed ut similitudinem determinatarum rerum ex cognitione phantasmatum, et sic formae intelligibiles in actu non sunt per se existentes neque in phantasia neque in intellectu agente, sed solum in intellectu possibili.<sup>296</sup>

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scientiam." In a certain sense, this is Thomas' response to the paradox formulated in Plato's *Meno*: one cannot inquire about something without knowing already what that something really is.

<sup>293</sup> Cf. *De potentia*, q. 5, a. 8 (quoted above) and Hayen, *L'intentionnel dans la philosophie de Saint Thomas*, 18, 133-134. This view of the intentional force of sensible reality, based on the presence of forces transcending material bounds, returns in Vital of Furno; cf. ch. III, § 4.4.

<sup>294</sup> *Summa theologiae*, I, q. 84, a. 4, ad 1um: "Ad primum ergo dicendum quod species intelligibiles quas participat noster intellectus, reducuntur sicut in primam causam in aliquod principium per suam essentiam intelligibile, scilicet in Deum." See also *idem*, l.c., a. 5c; *De substantiis separatis*, c. 12.77.

<sup>295</sup> *Summa theologiae*, I, q. 14, a. 1 c; cf. Aristotle's *kata logon* in *De anima*, 424a17f. The importance of Thomas' *a priori* is possibly overstressed by Rahner, *Geist in Welt*, 325f.

<sup>296</sup> *De veritate*, q. 10, a. 6, ad 7um. The distinction between "agens instrumentale" and "agens principale" will be accepted by many later authors, from Duns Scotus to the Spanish schoolmen. See also *De veritate*, q. 10, a. 6c and *Summa theologiae*, I, q. 84, a. 6. The study of A. Wilder, "On the knowing species in St. Thomas: their neces-

The ambivalence between production and reception of the intelligible species is rooted in Aquinas' doctrine of participation: the human mind has a 'natural' inclination towards material reality, though it is not uniquely determined by it<sup>297</sup>. In contrast with the position of Thomas, the doctrine of the *species impressa*, at least in the variety originating from perspectivist optics, presupposed a total passivity of the human soul in its relation to sensible reality<sup>298</sup>. Scientists such as Robert Grosseteste and Roger Bacon developed this theory of a *species impressa* for perception only, focusing in particular on visual perception. They invoked recently discovered Arabic scientific doctrines, and made use of central tenets of Augustine's cognitive psychology as well<sup>299</sup>. The range of propagation for impressed species was restricted, however<sup>300</sup>, and they certainly did not allow for (impressed) *species intelligibiles*<sup>301</sup>.

In spite of the essential ambivalence of Thomas' doctrine, later critics of the intelligible species generally assume that the latter are impressed. With this assumption, the opponents of the species are induced to run together two quite different doctrines, thus engendering and propagating a conceptual misunderstanding of amazing dimensions. It should be admitted that Thomas himself laid the seeds for this misinterpretation: his theory on the nature and function of the intelligible species must be pieced together from scattered remarks in a number of works.

Interpreting Thomas on the receptivity of the possible intellect in terms of impressed species is a fallacy committed by adversaries and advocates of his doctrine alike. Indeed, Thomas' followers fre-

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sity and epistemological innocence", in *Angelicum* 68(1991), 3-32, misleadingly speaks of impressed species, functional in the realm of intellectual knowledge.

<sup>297</sup> In reaction to the criticisms of intelligible species by Henry of Ghent and others, later Thomists, such as Thomas Sutton, will overemphasize the passivity of the human mind in mental acts; cf. ch. IV, § 1.4.

<sup>298</sup> An impressed species is to be found already in Domenicus Gundissalinus, *De anima*, cit., 88; cf. also p. 90 for an *intentio impressa*. Gundissalinus, however, presumed that species or intentions were impressed by a separate intelligence; cf. the texts quoted in § 1.2 of this chapter. See, in this context, also Thomas' opposition against Stoic psychological views on the passivity of human knowledge in *Summa contra Gentiles*, III, c. 84. For discussion, see G. Verbeke, "St. Thomas et le Stoicisme", in *Antike und Orient im Mittelalter*, Berlin 1962, 48-68, on p. 52.

<sup>299</sup> See also § 1 of the next chapter.

<sup>300</sup> See Roger Bacon, *De multiplicatione specierum*, 46, quoted above in § 2.3.

<sup>301</sup> Cf. § 1.3 and § 2.3 of this chapter.

quently accept the terminology set by their opponents<sup>302</sup>, and even his immediate contemporaries are unable to fully comprehend the doctrine of intelligible species.

Another issue of fundamental interest is the delicate ontological status of intelligible species. Its substantive explanatory power in cognitive psychology is counterbalanced by a fairly vague ontological determination as accident in mental reality. There are two plausible motives for this relative weakness of theories of mental representation in Aristotelian philosophy in general, and in Thomas' psychology in particular. Firstly, Thomas does not seem to consider this ontological problem as a vital issue for his cognitive psychology. Secondly, a solution to this problem within the Peripatetic conceptual framework, dominated by physicalist terminology, seems virtually impossible on anyone's theory.

The Aristotelian character of Thomas' doctrine of intelligible species can be questioned at least in the following sense: if the species is really distinguished from the concretely known object, then how is it possible that our cognition consists (ontologically) in the identity of knowing mind and known object? If Aristotle's tense remarks about the identity of mind and object are taken literally, the intelligible species can only jeopardize this identity. Many critics argue that the doctrine of intelligible species introduces an absurd "tertium quid" in the intellectual act. However, Thomas emphasizes the instrumental character of the species, that is, the fact that it is an unconscious and structural principle, rather than a mere copy of the cognitive object—thereby breaking new ground towards a non-circular theory of knowledge acquisition, especially when he attempts to analyze the substructures of knowledge in terms of unknown principles and 'un-knowing' capabilities. Aquinas does not postulate a complete self-transparency of the human mind, and this is perhaps one of the most important side effects of his contribution to the development of cognitive psychology. Our soul is open to the sensible world, and only subordinately has access to its "world-

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<sup>302</sup> This misunderstanding persists in contemporary critical studies; cf. C. Giacon, *La seconda scolastica*, vol. I, Milano 1944, 105: "Invece, se viene tenuta presente la dottrina di S. Tommaso della causalità strumentale, non si dà che un'unica azione, la quale produce l'intelligibile in atto, che è la stessa specie impressa." See also D.W. Hamlyn, *Sensation and Perception*, 48.

dependent” contents, because the processing of sensory information is a necessary condition for the cognition of any object whatsoever.

## CHAPTER THREE

### *SPECIES INTELLIGIBILIS*: GENESIS OF A PHILOSOPHICAL CONTROVERSY

Thomas' doctrine of intelligible species began to be perceived as controversial only some time after its formulation. Initially, the idea of a formal mediating principle for intellectual knowledge was generally accepted without strong reservations. Systematic opposition developed only after 1279, when Henry of Ghent—who argued for the intelligible species in his early writings—in later works rejected the notion as being superfluous and misleading<sup>1</sup>.

Following bishop Tempier's condemnation in 1277, many theologians under Augustinian banners sought to restrain the naturalist encroachments of Aristotelian psychology. The condemnation weighed heavily on the life of universities for some decades, the tension reaching a peak with the exile of Giles of Rome from the theological faculty in Paris, between 1278 and 1285<sup>2</sup>. Godfrey of Fontaines' hesitation to take a stand on the question of angelic presence in space in 1296 is another case in point<sup>3</sup>. Both authors were critical of episcopal authority in doctrinal discussions<sup>4</sup>.

Although some of Thomas' conceptions were involved in the 1277 enactment, his thought as a whole was not considerably discredited<sup>5</sup>. However, the excursions of bishops Tempier and Kil-

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<sup>1</sup> See § 3.2.

<sup>2</sup> Cf. Aegidius Romanus, *Apologia, Opera*, vol. III.1, ed R. Wielockx, Firenze 1985; E. Hocedez, "La condamnation de Gilles de Rome", in *Recherches de théologie ancienne et médiévale* 4(1932), 34-58; R. Hissette, "Étienne Tempier et ses condamnations", in *Recherches de théologie ancienne et médiévale* 47(1980), 231-270, on pp. 242-47.

<sup>3</sup> See *Quodlibetum* XIII, q. 4, ed. J. Hoffmans, Louvain 1935, 221, and R. Hissette, "Note sur la réaction anti-moderniste d'Étienne Tempier", in *Bulletin de la philosophie médiévale* 22(1980), 88-97, on p. 89f.

<sup>4</sup> See Giles of Rome, *In II Sent.*, Venetiis 1581, d. 32, q. 2, 471b; Godfrey of Fontaines, *Quodlibetum* XII, q. 5, Leuven 1932-35, p. 100f.

<sup>5</sup> Theses that probably touched Thomas' epistemology and doctrine of species, at least partially, are those numbered 122 and 126. The latter censors the radical poten-



wardby into philosophical discussions seem to have contributed considerably to mitigate enthusiasm for the kind of sense-dependent cognitive psychology favoured by Thomas<sup>6</sup>—at least among the members of theological faculties, who were profoundly influenced by the Augustinian conceptions put forward by theologians in the first half of the 13th century<sup>7</sup>.

The reception of Thomas' doctrine of mediating species proceeded along a rather peculiar and complicated path. The basic features of Aquinas' theory were endorsed by most members of the Faculty of Arts, who often merged it with terminological and doctrinal elements derived from Averroes. In particular, these authors shared Thomas' theses on the receptivity of the possible intellect and the essential role of phantasms in determining the content of intellectual knowledge. However, as emphasized in the previous chapter, these views can be properly understood only by reference to the doctrine of the *a priori* structures contained in the "lumen intellectus agentis," and within the broader context of Thomas' participation theory. Thomas' abstraction theory was received in the Faculty of Arts detached from this conceptual framework, and thus the species were conceived exclusively as *a rebus acceptae*. Another element reinforcing this interpretive tendency was the view of

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tiality of the human intellect, the former rules out the receptivity of our mind only for intelligible species originating from the sensitive faculties. Both doctrines are present in Thomas, but in a less radical form than in some authors of the Faculty of Arts. Thesis no. 115, however, condemns the innatism founded on *species concreatae*. For the text, see Thomas Aquinas, *Summa contra Gentiles*, vol. III, appendix II.C, *Propositiones damnatae a Stephano Tempier*, 493-502, on pp. 498-499. For a discussion of the condemnation, see R. Hissette, *Enquête sur les 219 articles condamnés à Paris le 7 mars 1277*, Louvain-Paris 1977, in particular pp. 218-226; idem, "Albert le Grand et Thomas d'Aquin dans la censure parisienne du 7 mars 1277", in *Studien zur mittelalterlichen Geistesgeschichte und ihre Quellen*, ed. A. Zimmermann, Berlin-N.Y. 1982, 226-246, in particular pp. 239-46. R. Wielockx, "Autour du procès de Thomas d'Aquin", in *Thomas von Aquin. Werk und Wirkung im Licht neuerer Forschungen*, ed. A. Zimmermann, Berlin-N.Y. 1988, 413-38, has demonstrated that Tempier prepared also a distinct case against Thomas in 1277.

<sup>6</sup> The importance of this much-noted marker is not to be overstressed, as is rightly observed by Tachau, *Vision and Certitude*, p. xvii, because late medieval thinkers did not turn away from the more all-encompassing goals in their epistemological speculation, developing new theories by appropriating as wide a range of sources as could be put to use.

<sup>7</sup> However, in general, the assimilation of Peripatetic doctrines by these authors did not raise sharp doctrinal conflicts; cf. ch. II, § 1.

intelligible species as impressed by illuminated phantasms, outlined by Giles of Rome at the turn of the 13th century<sup>8</sup>.

The criticisms of, for example, Henry of Ghent and Peter Olivi against the doctrine of intelligible species—as formal principle of intellectual knowledge which is impressed by the senses—is to be interpreted against the background of this complex and doctrinally heterogeneous framework. In general, the critics of intelligible species do not focus on a specific author or position; their target is an eclectic, widespread “*communis opinio*”, embodying—in particular after Thomas’ death—quite evident naturalistic assumptions. This fact is not recognized in many critical studies: according to a generally accepted interpretive line, the attack of Henry of Ghent and other 13th-century authors on intelligible species is directed principally against Thomas’ conceptions<sup>9</sup>. A careful reading of Henry’s and Aquinas’ texts reveals, that this conclusion is unjustified, however. In his polemical *quaestiones*, Henry rarely refers to a specific author, and this omission suggests that he was unwilling or unable to distinguish between the views of Thomas and his ‘followers’ in the Faculty of Arts. In either case, it is clear that his polemic target is a doctrine shared by more than one author. More precisely, in his attack against impressed intelligible species, he conflates Aquinas’ (and probably also Giles’) abstracted intelligible species, its naturalistic interpretation by some Masters of Arts, and the impressed (sensible) species of perspectivistic optics<sup>10</sup>.

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<sup>8</sup> Cf. his *In II Sent.*, which was not finished before 1309; for discussion, see *infra*.

<sup>9</sup> Cf. F.A. Prezioso, *La “species” medievale e i prodromi del fenomenismo moderno*, Padova 1963, p. 5; S.J. Day, *Intuitive Cognition. A Key to the Significance of the Later Scholastics*, St. Bonaventure (N.Y.) 1947, 6f; G. Leff, *The Dissolution of the Medieval Outlook: An Essay on the Intellectual and Spiritual Change in the Fourteenth Century*, New York 1976, 60. For 14th-century authors like Ockham, Tachau, *Vision and Certitude*, 3f, already demonstrated that the perspectivists are principally involved. Tachau, however, does not emphasize adequately the superposition of various doctrines in the criticisms of intelligible species, because perspectivistic optics did not theorize *intelligible* species. In the writings of Grosseteste and Bacon, for instance, no intelligible species are treated.

<sup>10</sup> Henry constantly refers to a *species intelligibilis impressa*, which is, however, nowhere to be found in Thomas. For impressed species in Gundissalinus and Bonaventura, see ch. II, § 1.2 and 7.

Since most opponents of the species doctrine appeal to Augustine, the first section of this chapter is devoted to a critical examination of the Augustinian texts involved in the dispute<sup>11</sup>.

In the second section, I examine the work of a group of authors—active in the period ranging from the last years of Thomas' life to those immediately following his death—who maintain the necessity of the intelligible species. Their writings also provide a significant sample of the spiritual milieu in which Henry of Ghent developed his criticisms after 1279.

Some critics of the intelligible species, such as Henry and Godfrey of Fontaines, coin new terms and raise new doctrinal issues that remain integral parts of the species controversy until the Second Scholasticism. The third section is devoted to examining the main topics covered by these authors: the distinction between *species impressa* and *species expressa*, and the question whether the active intellect 'does' something in or with the phantasms, that is, how this intellect relates to sensory representational devices, and whether it manipulates them.

In the fourth section, I discuss the views of a group of authors, contemporaries of Henry of Ghent and probably well informed about his criticism of intelligible species, who put forward more moderate positions.

The fifth section is devoted to relatively independent authors, such as Dietrich of Freiberg and Henry Bate. They do not fit any of the groups examined in the previous sections: though accepting the intelligible species, they characterize the status and function of this principle within a thoroughly Neoplatonic doctrinal context.

The structure of the medieval species debate will be codified, as far as the principal terms and issues are concerned, in the period spanning from the death of Thomas to the scholarly activity of John Duns Scotus. For some of the authors involved, whose views of

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<sup>11</sup> Augustine's authority was central but not exclusive. William de la Mare, in his critique of Thomas' psychological conceptions, refers also to Averroes and Anselmus. See his *Correctorium* which is reported integrally in [Richard Knapwell], *Le correctorium corruptorii "Quare"*, ed. P. Glorieux, Le Saulchoir-Kain 1927, in particular pp. 10-11, 173. For more information on this work and the ensuing debate, see § 2.4 of this chapter. However, already Thomas discussed at length Augustine's opinions when he developed his theory of intelligible species; cf. *Summa theologiae*, I, q. 84. And also those who defend Thomas against theological attacks will frequently invoke Augustine's authority.

intelligible species have already been informatively surveyed elsewhere, I discuss only those points that are necessary for our understanding of how the controversy developed<sup>12</sup>.

### § 1. AUGUSTINE ON "SPECIES" AND KNOWLEDGE OF SENSIBLE REALITY

Augustine's reflections on knowledge of material reality play a prominent role in the medieval debate on species, especially after the death of Thomas<sup>13</sup>. He is appealed to mostly by Franciscan and secular opponents of the species doctrine, at the end of the 13th and during the first half of the 14th century. For this reason, it is appropriate to discuss here his views on formal cognitive principles<sup>14</sup>.

Strongly influenced by Stoic doctrines on sense perception<sup>15</sup>, Augustine assigns a prominent function in our knowledge of sensible reality to (what he calls) the "species" of material things. In this context, "species" mainly signifies shape, figure or form<sup>16</sup>. Augustine postulates the existence of a chain of entities, interchangeably referred to as "forms", "images", "similitudes" or "species", originating in sensible bodies, penetrating sense organs and eventually reaching perceptual and cognitive faculties<sup>17</sup>. Their pres-

<sup>12</sup> This applies in particular to the authors discussed in § 3 and 4.

<sup>13</sup> For an overview of Augustine's epistemological ideas, see U. Wienbruch, *Erleuchtete Einsicht. Zur Erkenntnislehre Augustins*, Bonn 1989.

<sup>14</sup> As we shall see in ch. X (vol. II), the references to Augustine are frequent also in the species debate during the Second Scholasticism.

<sup>15</sup> For a general discussion of Augustine's relation with Stoic philosophy, see G. Verbeke, "Augustin et le Stoïcisme", in *Recherches Augustiniennes* 1(1958), 67-89. See also S. Vanni Rovighi, "La fenomenologia della sensazione in S. Agostino", *Rivista di filosofia neoscholastica* 54(1962), 18-32.

<sup>16</sup> What follows shows that I roughly agree with Henry of Ghent, *Quodlibetum* IV.7, 150rb-va, who distinguishes three meanings of the term "species" in Augustine: "forma rei", "similitudo rei naturalis", and "res cognita"; for discussion, see F.A. Prezioso, *La "species" medievale e i prodromi del fenomenismo moderno*, 23-25. For surveys, see also P. Michaud-Quantin, "Les champs sémantiques de *species*", and Lindberg, "Introduction" to *Roger Bacon's Philosophy of Nature*, liii-lv. It is hard to distinguish precisely between images, species, forms, and similitudes in Augustine; see, e.g., *De Genesi ad litteram*, XII. For the use of the expression "intelligibilis species" in an ethical context, see *De Civitate Dei*, XI, 27.2, quoted in ch. I, § 4.1.

<sup>17</sup> Cf. *De musica*, in *Patrologia Latina*, vol. 32, VI, c. 11, 1180; *De vera religione*, in *Opera*, pars I. 1, Turnhout 1962, 199: "Phantasmata porro nihil sunt aliud quam de specie corporis corporeo sensu attracta figmenta"; see *idem*, 226 on the "species corporis" as a basis for the content of sensible cognition. See also *De Genesi ad litteram*,

ence enables one to attain knowledge of distant bodies or to recall objects perceived in the past.

I have mentioned the well-known impact of Stoic views of sensation and perception on Augustine's characterization of the role of sensible reality in perception. In turn, it can be plausibly argued that this aspect of Augustine's philosophy was a chief source of inspiration for Bacon's doctrine of multiplication<sup>18</sup>. Augustine maintains that the influence of sensible reality does not reach beyond the level of the senses—more precisely, of sense organs, because the body cannot influence, affect or inform the soul<sup>19</sup>. And Bacon, as I pointed out in the previous chapter, for nearly the same reason tacitly supposes that species propagate through external and internal senses only. It is very likely that this restriction was inspired by 13th-century Augustinian psychologies, centered on the immateriality of the human soul<sup>20</sup>.

It is also crucial to recall Augustine's frequent talk of *impressed* images and species<sup>21</sup>, some of which even seem capable of reaching the mind. These claims give rise to serious misunderstandings and intricate controversies in the medieval epistemological debate on intelligible species<sup>22</sup>. Indeed, some authors suggest that Augustine defended, or at least presupposed, the existence and necessity of (impressed) species for intellectual cognition<sup>23</sup>. Other participants

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PL, vol. 34, XII, c. 24, 473, and in particular, *De Trinitate*, ed. W.J. Mountain, *Opera*, pars XVI.1-2, Turnhout 1968, XI, c. 9, 353 (quoted below).

<sup>18</sup> The possible dependence of Bacon on Augustine has been signalled by Tachau, *Vision and Certitude*, 23 and Lindberg, "Introduction", Iv.

<sup>19</sup> Notice that Augustine does not identify (bodily) sense organs with the senses as perceptual faculties.

<sup>20</sup> Bacon's emphasis on the material character of species and the spirituality of the soul is discussed in ch. II, § 2.3. An identification of 13th-century Augustinian psychology with Augustine's psychology as such is unjustified. One of the main motives is that, for theological reasons concerning the transmission of the original sin, Augustine does not assume that the soul is completely immaterial. The largely instrumental use of his views in the species debate shows the importance of this distinction.

<sup>21</sup> *De musica*, VI, c. 11, 1180; *Epistola VII*, in PL, vol. 33, 68-69; *De Genesi ad litteram*, XII, c. 6, 459; *De Trinitate*, XI, c. 2, 334f; see also *idem*, XIII, c. 1, 385.

<sup>22</sup> As will be recognized by Henry of Ghent, *Quodlibetum* IV.7, 150rb.

<sup>23</sup> Both William de la Mare and his opponents accept Augustine's conception of a chain of species (see *De Trinitate*, XI, c. 9, 353, quoted below); see *Le correctorium corruptorii* "Quare", 10-11, and *Le Correctorium corruptorii* "Circa" de Jean Quidort de Paris, ed. J.-P. Müller, Roma 1941, 101. Matthew of Aquasparta, *Quaestiones de cognitione*, q. III, appeals on p. 253 to Augustine for the existence of impressed species (referring to *De Trinitate*, X, c. 6, 301f, and XI, c. 3, 340-341); in this

in the debate, who argue against any mediating entity between senses and intellectual soul, are firmly convinced of having Augustine on their side<sup>24</sup>. Yet another view is put forward by Peter Olivi, who claims that Augustine already identified species and cognitive act<sup>25</sup>. In passing, let me mention that during this same period Augustine's authority is invoked in support of innate species<sup>26</sup>. These data, taken as a whole, point to the necessity of examining in detail Augustine's views on cognitive psychology in order to assess more precisely his impact on the medieval species dispute and, to a certain extent, the very nature of the latter.

Augustine's view of the origin of human knowledge is poignantly expressed in *De Trinitate* by the well-known dictum "Ab utroque enim notitia paritur, a cognoscente et cognito."<sup>27</sup> In the particular

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same "quaestio", however, once established that the soul produces the species (254-262), he rejects their impression and attempts on p. 266 to reconcile Augustine with Aristotle (see the notes of the editor to Matthew's texts). Roger Marston, *Quaestiones disputatae de anima*, q. 9, 412-16, defends the necessity of species with quotations from *De Genesi ad litteram* (XII, c. 24, 474), *De musica* (VI, c. 2, 1163), and *De Trinitate* (X, c. 5, 321). Vital du Four, *Huit Questions Disputées sur le problème de la connaissance*, 216, defends the production of the intelligible species by the phantasm and the agent intellect, invoking the authority of *De Trinitate* (X, c. 5) against the multiplication doctrine and against those who think that it is educted from the potentiality of the possible intellect; see also pp. 217 and 226. Several Augustine quotations can be found in Duns Scotus' defence of intelligible species; cf. *Ordinatio*, I, dist. 3, pars 3, q. 1, 209 and 239-40 where Duns observes that Augustine does not use the expression "intelligible species", and yet presupposes its necessity! See also Franciscus de Mayronis, *Preclarissima ac multum subtilia egregiaque scripta (...) in quatuor libros Sententiarum*, Venetiis 1520, 27va; James of Viterbo, *Disputatio prima de Quolibet*, ed. E. Ypma, Roma 1968, 172; Agostino Trionfi, *Opusculum perutile de cognitione animae et eius potentiis*, Bononiae 1503, Ciiiv-Cvr and Gregory of Rimini, *Lectura super primum et secundum Sententiarum*, dist. 3, q. 1, 306-308, 318-22, 359-60. Many later schoolmen invoke Augustine's authority for (intelligible) species; cf. ch. X and XII.

<sup>24</sup> Henry of Ghent, *Quodlibetum* IV.7, 148vab; see also *Quodlibetum* V.14, 260va and 262ra. William of Ockham, *Quaestiones in librum secundum Sententiarum*, q. 13, 296: according to Augustine, in *De Trinitate*, the intellectual soul does not need any similitudes for its act.

<sup>25</sup> See *Quaestiones in secundum librum Sententiarum*, vol. III, q. 74, 112; he refers to *De Trinitate*, IX, c. 5; XI, c. 1; XII, c. 15; XV, c. 3. Thomas Sutton, a famous English Thomist, puts forward a similar theory; see ch. IV, § 1.4.

<sup>26</sup> Henry Bate, *Speculum divinorum et quorundam naturalium*, vol. II, 80. Though accepting, as is well-known, the mind's acquaintance with the "eternal reasons", Augustine rejected innate cognitive contents; cf. his criticisms of Plato's *Meno* in *De Trinitate*, XII, c. 15 and ch. II, § 1.5.

<sup>27</sup> *De Trinitate*, IX, c. 12, 309. This definition is accepted by almost all medieval authors; see also Part III for the Spanish schoolmen.

case of knowledge of sensible things, the latter are essential to producing the relevant cognitive acts<sup>28</sup>. In several writings, Augustine emphasizes the presence in the senses of forms originating from corporeal reality<sup>29</sup>. Moreover, he holds that these forms may somehow reach the soul<sup>30</sup>. This does not imply that the human body is capable of affecting the soul: in the act of sensation, our soul is not causally involved, but nonetheless reacts, untouched in its own structure, to bodily affections<sup>31</sup>. According to Augustine, sense perception amounts exactly to this reaction<sup>32</sup>: perception is an activity of the mind taking place when the body receives impressions. Thus, Augustine distinguishes between a passive and an active component in perceptual knowledge, and this may be viewed as his proposal for discriminating between sensation and perception<sup>33</sup>.

Corporeal reality, the senses, and the immaterial soul or mind stand to each other into a fixed hierarchical relationship. The senses are a meeting point for body and soul; this interpretation is confirmed by the fact that senses are assimilated to the spirit<sup>34</sup>. In his

<sup>28</sup> Knowledge of the soul itself and immaterial reality in general originates from within; cf. *De Trinitate*, IX, c. 12, 309.

<sup>29</sup> *Contra Julianum Pelagianum*, PL, vol. 44, 812: "Mirabilis est autem quando rerum corporalium qualitates in res incorporeales transeunt, et tamen fit, quando formas corporum quas videmus, haurimus quodam modo, et in memoriam recondimus, et quocumque pergimus, nobiscum ferimus: nec illae recesserunt a corporibus suis, et tamen ad nos mirabili modo affectis nostris sensibus transierunt."

<sup>30</sup> *De musica*, VI, c. 5, 1167.

<sup>31</sup> *De musica*, VI, c. 4-5, 1166-69. For discussion, see M.A.I. Gannon, "The active theory of sensation in St. Augustine", in *New Scholasticism* 30(1956), 154-180. The impossibility of bodily influences on the soul is an untouchable dogma for many 13th- and 14th-century authors. For explicit references to Augustine in this context, see: Peter Olivi, *Quaestiones in secundum librum Sententiarum*, vol. III, q. 72, 15-17, 56; Matthew of Aquasparta, *Quaestiones*, q. III; Duns Scotus, *Ordinatio*, l.c., 247-48; Dietrich of Freiberg, *De intellectu et intelligibili*, 148-49, 180.

<sup>32</sup> *De musica*, VI, c. 5, 1169: "Et ne longum faciam, videtur mihi anima cum sentit in corpore, non ab illo aliquid pati, sed in ejus passionibus attentius agere, et has actiones sive faciles propter convenientiam, sive difficiles propter inconvenientiam, non eam latere: et hoc totum est quod sentire dicitur." See also *De Trinitate*, XI, c. 2, 334f. Peter Olivi will appeal to these passages for the defence of his theory of "aspectus"; see *In II Sent.*, vol. III, q. 74, 123-24.

<sup>33</sup> See D.W. Hamlyn, *Sensation and Perception*, 43-45 for a cursory survey of the relation between perception and judgment in Augustine. For the Stoic background of this particular relation between perception and judgment, cf. ch. I, § 1.4.2. A peculiar relation between bodily impressions and perception will be theorized during the Renaissance by Campanella, who defines sense perception as a "perceptio passionis"; see ch. VIII, § 3.5.

<sup>34</sup> *De Trinitate*, X, c. 5, 321: "Nam illas animae partes quae corporum similitudinibus informantur, etiam cum bestiis nos communes habere sentimus." For the

*De Genesi ad litteram*, Augustine presents his theory of vision, applying this hierarchical, three-fold distinction to bodily, spiritual, and intellectual vision<sup>35</sup>. In this exegetical comment, Stoic epistemological conceptions continue to imbue his views on sense perception: corporeal vision is what the eyes gather in the visual field, spiritual vision grasps (sensible) objects through images, intellectual vision does not use any organs or images. The second stage of this process mediates (bodily) sensation and (mental) perception, and grounds our capacity to recollect. When spiritual vision concerns absent things, it presupposes the presence of "imagines impressae animo"<sup>36</sup>; the latter—in virtue of their 'intentional' presence in the senses<sup>37</sup>—allow the soul to process primary sensory materials. Indeed, spiritual images play a crucial role in the explanation of recollection, dreams, visions, and prophecies. Spiritual vision, which requires the activity of the soul, transcends bodily vision<sup>38</sup>. What is seen through spiritual vision may be correctly said to originate in (and yet is not caused by) sensible reality. Indeed, the human soul is essentially active in this type of perception, that is, it produces its own perceptions<sup>39</sup>.

In *De Trinitate*, Augustine examines the various aspects of human knowledge, integrating these doctrinal elements into a more comprehensive theoretical framework. More systematically than in other writings, he distinguishes between two types of knowledge regarding, respectively, immaterial phenomena and sensible reality<sup>40</sup>. Moreover, he goes beyond general observations on the pres-

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intermediary position of the spirit in Augustine's psychology, see *De Genesi ad litteram*, 466-67; for discussion, see G. Verbeke, *L'évolution de la doctrine du pneuma du Stoicisme à Saint Augustin*, Paris-Louvain 1945.

<sup>35</sup> In general, see *De Genesi ad litteram*, XII, c. 6-28.

<sup>36</sup> See *De Genesi ad litteram*, XII, c. 6, 459, and c. 23, 473 for the role of species in human memory.

<sup>37</sup> *De Genesi ad litteram*, XII, c. 12, 463.

<sup>38</sup> *De Genesi ad litteram*, XII, c. 19-20, 470; spiritual vision, in turn, is transcended by mental vision; cf. c. 24, 474.

<sup>39</sup> *De Genesi ad litteram*, XII, c. 20, 470-471. For the Neoplatonic background, see *Enneades*, VI.7.7 and ch. I, § 2. Various authors will invoke Augustine's authority to sustain their view that the production of the species is merely due to the soul. See Matthew of Aquasparta, *Quaestiones*, q. III, 261; Vital du Four, *Huit Questions*, 217. Cf. also Henry Bate, *Speculum*, vol. I, 170; in vol. II, 80, Bate refers to Augustine for the existence of innate species.

<sup>40</sup> See *De Trinitate*, IX, c. 4, 297; c. 12, 308f; X, c. 10, 328-29. In *De Genesi ad litteram*, for instance, he states that our knowledge of God is by way of species; cf.



ence of infused or impressed images or species in the senses, memory or soul, by formulating a more precise account of knowledge of extra-mental reality. He advocates once again its sensible origin in general, and the indispensable role of the senses in particular<sup>41</sup>. In the same context, he makes the interesting move of identifying the form produced in and by the senses with the sensitive act itself:

Ac per hoc tardioribus ingeniis difficillime persuaderi potest formari in sensu nostro imaginem rei visibilis cum eam videamus, et eandem formam esse visionem.<sup>42</sup>

We shall see that this identification of mental content and act (or actual representation) will be adopted, for intellectual knowledge too, by Peter Olivi and many other medieval and Renaissance authors<sup>43</sup>.

According to Augustine, sense perception is the result of a co-operation between extra-mental reality and human soul. Soul and reality are mediated by the impression of a “species corporis” in the senses. This species belongs to corporeal reality; its impression or “production” does not pertain exclusively to either body or soul, as it occurs “neque sine corpore neque sine anima”<sup>44</sup>. Once more, Augustine introduces an analogue of the Stoic spirit-pneuma to serve as a crucial intermediary channel in the process of sense perception. The cognitive grasp of the sensible object, however, is effectively achieved by an act of the will, and therefore pertains exclusively to the soul<sup>45</sup>.

In this view of the cognitive act, the species is described both as “forma rei” and as memory trace<sup>46</sup>. It is posited at the very beginning of knowledge, and it is also seen as its end result; thus, it cir-

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XII, c. 27-28, 477-78. This is one of the issues dividing medieval theologians on the “visio beatifica”.

<sup>41</sup> *De Trinitate*, X, c. 10, 329; XI, c. 2, 334 and 335: “(...) anima tamen commixta corpori per instrumentum sentit corporeum, et idem instrumentum sensus vocatur.”

<sup>42</sup> *De Trinitate*, XI, c. 2, 337.

<sup>43</sup> Olivi refers to Augustine for this identification; cf. *In II Sent.*, q. 74, 112. See also § 3.4 of this chapter. As regards Renaissance disputes, cf. ch. VI, and ch. VII, § 3.2.

<sup>44</sup> *De Trinitate*, XI, c. 2, 338.

<sup>45</sup> *De Trinitate*, XI, c. 3, 340-341.

<sup>46</sup> *De Trinitate*, XI, c. 3, 340: “Sed pro illa specie corporis quae sentiebatur extrinsecu, succedit memoria retinens illam speciem quam per corporis sensum combibit anima”; cf. XI, c. 8, 349f.

cumscribes the cognitive process and guarantees its formal unity. Indeed, Augustine maintains that there is a chain of species originating in corporeal reality and reaching up, through senses and memory<sup>47</sup>, to the “*acies cogitantis*”:

In hac igitur distributione cum incipimus ab specie corporis et pervenimus usque ad speciem quae fit in contuitu cogitantis, quatuor species reperiuntur quasi gradatim natae altera ex altera, secunda de prima, tertia de secunda, quarta de tertia. Ab specie quippe corporis quod cernitur exoritur ea quae fit in sensu cernentis, et ab hac ea quae fit in memoria, et ab hac ea quae fit in acie cogitantis.<sup>48</sup>

The Augustinian notion of a chain of species between sensible reality and the human mind does not entail that the species is impressed in a purely passive way upon the cognitive faculties. Indeed, Augustine's views on (impressed) species and the related type of cognition<sup>49</sup> are intrinsically ambivalent. Augustine holds that the soul receives species from the bodies. But we have seen that this assumption does not exclude an active role of the human soul in perception and cognition<sup>50</sup>. This ambivalence raises subtle problems of interpretation, and one should not be surprised of the inadequate readings of many medieval authors. On the one hand, Augustine follows the Stoic doctrine of the origin of sensible knowledge in impressed forms, images, similitudes or species. On the other hand, he claims that the body cannot exert any influence on the soul. Thus, he is bound to reject the existence of forms or species originating in bodily reality and impressed upon the immaterial soul. The impression is strictly confined to the senses, which mediate between sensible reality and the mental realm.

After the diffusion of the newly discovered Aristotelian and Arabic psychology in the 13th century, Augustine's remarks on the species were bound to be interpreted within a Peripatetic categorial framework. Aristotelian cognitive psychology did not endorse the

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<sup>47</sup> The argument from memory for the existence of the intelligible species is invoked by Duns Scotus, cf. *Ordinatio*, l.c., 209, 228-29, 233, 281. See also Peter of Aquila (ch. IV, § 1.2) and Peter Crockaert (ch. V, § 2.7). It plays a pivotal role in the species analysis of Gregory of Rimini; see ch. IV, § 3.4.

<sup>48</sup> *De Trinitate*, XI, c. 9, 353; cf. c. 8, 351.

<sup>49</sup> See also *De Trinitate*, XIII, c. 1, 382, for “*notitia impressa*”; cf. the quotations in the initial notes to this section.

<sup>50</sup> See *De Trinitate*, XI, c. 9, 353 for the role of the will in producing a series of species.

impression of species; and yet, it conceived of intellectual knowledge as fundamentally dependent on sense perception.

In the controversy on intelligible species arising after Thomas' death, Augustine's texts prompted conflicting reactions. Augustine, as a rule, does not use the expression "intelligible species"<sup>51</sup>, and usually circumscribes the causal efficacy of species within the senses and the spirit—which connect our soul to material reality. In *De Trinitate*, however, Augustine states that there is a chain of species reaching up to the level of the human mind. As a consequence, medieval authors, only occasionally responsive to the full richness of linguistic and conceptual stratifications involved in the doctrine of intelligible species, were hopelessly muddled about—and tended to conflate—Augustine's remarks on species, Bacon's multiplication doctrine, and Thomas' views of intelligible species. Indeed, the authority of Augustine in theological and philosophical questions was invoked both for and against intelligible species. And his psychological views were mostly appealed to in order to undermine the necessity of impressed intelligible species.

## § 2. FIRST POSITIVE REACTIONS TO THOMAS' DOCTRINE

Between the last years of Thomas' life and the mid 1280's, Aquinas' views on the necessity of formal mediation in intellectual knowledge were rapidly assimilated by many Parisian masters of arts. The latter's field of psychological interests tended to be terminated by more strictly noetic issues and thus, on the whole, they did not provide any serious contributions to the species doctrine. Similar considerations apply to the authors involved in the *Correctoria* controversy. By contrast, the writings of Giles of Rome contain a remarkable innovation with respect to the generation of intelligible species. This Augustinian Hermit, though deeply influenced by Neoplatonic psychological conceptions, claims that intelligible species are produced by illuminated phantasms. This doctrine will exert a considerable influence, not only in the order of Augustinian

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<sup>51</sup> For the "species intellegibilis" in *De civitate Dei*, *Opera* pars XIV, 1-2, Turnhout 1955, XI.27, p. 347, see ch. I, § 4.1.

Hermits, but also as an anticipation of the 14th-century Averroist version of the species doctrine.

### 2.1. Siger of Brabant

The *Quaestiones in Tertium de anima* of Siger of Brabant<sup>52</sup> contain a theory of abstraction dispensing with any form of innatism—be it the concept of an innate light or the presence of an inborn habit in the human soul<sup>53</sup>. The only sources for the content of intellectual knowledge are the phantasms<sup>54</sup>. The rejection of any form of illumination and the emphasis on abstraction as a “facere” are typical of the way Averroes was received in this period<sup>55</sup>.

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<sup>52</sup> Siger of Brabant, ca. 1240—1284; cited by the papal legate Simon of Brion in 1266 in connection with political disturbances in the Faculty of Arts at the University of Paris, where he was master of arts, and one of the leaders of the radical Aristotelian movement; some of his beliefs are condemned by Bonaventure between 1267 and 1273, and by Stephen Tempier in 1270; Thomas' attack in 1270 on the doctrine of the uniqueness of the intellect prompted Siger to modify his views, but his career continued to be stormy. For contrasting accounts of the chronology of Siger's psychological writings, see: Z. Kuksewicz, *De Siger de Brabant à Jacques de Plaisance. La théorie de l'intellect chez les Averroïstes latins des XIIIe et XIVe siècles*, Wrocław-Varsovie-Cracovie 1968, 71-77; Siger de Brabant, *Quaestiones in tertium de anima, De anima intellectiva, De aeternitate mundi*, ed. B. Bazán, Louvain-Paris 1972, 67\*-78\*; E.P. Mahoney, “Saint Thomas and Siger of Brabant revisited”, in *Review of Metaphysics* 27(1973-74), 531-553, on p. 532f.

<sup>53</sup> Siger de Brabant, *Quaestiones in tertium de anima*, ed. B. Bazán, pp. 37-39. According to R. A. Gauthier, “Le cours sur l'*Ethica nova* d'un maître ès arts de Paris”, cit., 92, Siger had a direct knowledge of the innatism of this anonymous master; cf. on p. 38, ll.83-85 and p. 39, ll.92-3. On p. 39, l.2, Siger rejects also Albert's innatism. This question is discussed by G. Da Palma Campana, “L'origine delle idee secondo Sigieri di Brabante”, in *Sophia* 23(1955), 289-299; on pp. 297-99, Da Palma observes that according to Siger only the capacity to acquire knowledge is innate. See also E.P. Mahoney, “Saint Thomas and Siger of Brabant revisited”, p. 534.

<sup>54</sup> *Quaestiones in tertium de anima*, 40.

<sup>55</sup> See also J. Hamesse, *Les auctoritates Aristotelis. Un florilège médiéval*, étude historique et édition critique, Louvain-Paris 1974, p. 176: “Intellectus agens causat universalitatem in rebus.” This anthology was written probably between 1267-1325. Cf. Averroes, *In De anima*, 12, ll.25-26: “(...) sed intellectus est qui agit in eis universalitatem.” In this passage, Averroes talks about the intellect, not specified as agent intellect. See also J. Hamesse, *Les auctoritates*, 192: “Intellectus qui creat et generat intelligibilia est intellectus agens”; and cf. Averroes, *In De anima*, 390, ll.109-11. The anonymous author of this anthology attributes on p. 193 an abstraction of *quidditates* to Averroes, who in *In De anima*, 424, ll.27-30, does not mention, however, abstraction. In this anthology, practically the complete theory of abstraction is expounded as derived from Averroes, who evidently dominated the psychological and epistemological thought of many masters of arts.

Unlike many other masters of arts influenced by Averroistic conceptions, Siger does not employ “formae”, “intelligibilia” and “intentiones” as purely equivalent terms<sup>56</sup>. Abstraction concerns a “forma intelligibilis”<sup>57</sup>, which can be grasped because the agent intellect elaborates the “intentiones imaginatae” to obtain universal or intelligible intentions. In turn, these are crucial for performing the final step of the cognitive process—namely, the apprehension of sensible reality in “rationes rerum”<sup>58</sup>.

This rough summary of Siger’s view shows that he preserves the distinction between cognitive object and intentions which ground universal knowledge. Indeed, by claiming that the object of intellectual cognition is the universal, Siger is naturally led to distinguish the latter—a real form existing in particulars—from the abstracted universal intention by virtue of which the mind captures this real form predicable of a family of individuals:

Unde nota quod duplex est universale: quoddam est universale quod est intentio pura universalis abstracta, non praedicabilis de particularibus extra; aliud est universale quod non est intentio pura, sed est forma realis, existens in pluribus, praedicabilis de eisdem. Nota ergo quod universale quod est intentio universalis pura, facit cognitionem universalis realis.<sup>59</sup>

Siger’s universal intention performs only one of the functions attributed to it by Averroes: it is no longer regarded as the effectively known cognitive content, but, as representation, plays a functional role in the origin of intellectual knowledge. Thus, the universal intention presenting the intellect with its proper cognitive contents is not to be identified with the forms existing in sensible reality. The latter are universal (because predicable of more than one individual), and yet insufficient to ground the universality of human

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<sup>56</sup> Averroes, on the contrary, did not distinguish sharply between intelligible forms and intentions, see ch. I, § 3.3.

<sup>57</sup> *Quaestiones in tertium de anima*, 14.

<sup>58</sup> *Quaestiones in tertium de anima*, 49-50; see also p. 50: “Unde dico quod, praesentibus imaginatis intentionibus in organo phantasiae, facit intellectus agens intentiones universales intentionibus imaginatis, et ab illis intentionibus similibus abstrahit rationes rerum intelligendi universales.” And cf. p. 53: “Unde in natura intellectus est quod ipse recipiat intentiones imaginatas per partem sui quae dicitur intellectus possibilis, et quod agat illas intelligibiles per partem suam quae dicitur intellectus agens.”

<sup>59</sup> *Quaestiones in tertium de anima*, 68-69.

knowledge<sup>60</sup>. The abstraction of intelligible species from phantasms does not raise evident conflicts with this overall view.

In his later writings, after a controversial convergence on Thomistic positions<sup>61</sup>, Siger employs the term "species intelligibilis" as an equivalent for universal intention<sup>62</sup>. Finally, departing even further from Averroistic positions, in his commentary on the *Liber de causis* Siger puts forward a rather singular account of species. Just as in his previous writings, he emphasizes that the intellect receives intelligible species, because they are not innate<sup>63</sup>. It is remarkable that the Neoplatonic setting of this work does not induce him to assimilate the species to the cognitive object<sup>64</sup>. He does not restrict their instrumental function<sup>65</sup> and indeed—perhaps in the light of the basic realistic commitment of his cognitive psychology—he stresses the unity of the cognitive act in general, and the

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<sup>60</sup> This characterization of the universal intention looks like an elaboration of Thomas' determination of the universality of the species, which depended upon its expressing a form predicable over more individuals. See *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um: "species intellecta potest dupliciter considerari: aut secundum esse quod habet in intellectu, et sic habet esse singulare; aut secundum quod est similitudo talis rei intellectae, prout ducit in cognitionem eius, et ex hac parte habet universalitatem: quia non est similitudo hujus rei secundum quod haec res est, sed secundum naturam in qua cum aliis suae species convenit."

<sup>61</sup> Siger's (possible) evolution from Averroist to moderate positions is a controversial issue. Some scholars argue for a transition from Averroist to anti-Averroist psychology: cf. B. Nardi, *Sigieri di Brabante nel pensiero del Rinascimento italiano*, Roma 1945, 30f; A. Zimmermann, "Thomas von Aquin und Siger von Brabant", in *Literatur und Sprache im europäischen Mittelalter*, eds. A. Önnertfors and others, Darmstadt 1973, 417-447; E.P. Mahoney, "Saint Thomas and Siger of Brabant revisited", 532f. This view is also accepted by G. Fioravanti, "Sull'evoluzione del monopsichismo di Sigieri di Brabante", in *Atti dell'Accademia delle Scienze di Torino, II, Classe di scienze morali, storiche e filologiche* 106(1972), 407-464; however, Fioravanti emphasizes that Thomas' criticism did not lead Siger to accept Thomas' teachings, but only to correct his own views taking into account the empirical requirements of Aristotle's psychology in a more systematic way. A. Caparello, "Il *De anima intellectiva* di Sigieri di Brabante. Problemi cronologici e dottrinali", in *Sapienza* 36(1983), 441-474 detects no fundamental change of view between the *Quaestiones in tertium de anima* and the *De anima intellectiva*, and even argues that the latter was written before *Quaestiones*.

<sup>62</sup> See *De anima intellectiva*, ed. B. Bazán, 107-108.

<sup>63</sup> Siger de Brabant, *Quaestiones super librum de causis*, ed. A. Marlasca, Louvain-Paris 1972, 154, 161, and 162; see Kuksewicz, *De Siger de Brabant*, 57.

<sup>64</sup> *Quaestiones super librum de causis*, 154.

<sup>65</sup> *Quaestiones super librum de causis*, 157: "Et est intelligendum quod ipsum intelligibile obiectum aliquando est perfectio intelligentis non tantum secundum speciem intelligibilem sed etiam secundum seipsum in quantum est causa speciei intelligibilis per quam intelligitur".

origin of intelligible species in material things in particular<sup>66</sup>. This form of realism will be taken up and further developed by some of his Renaissance followers, for example by Tiberio Bacilieri, who maintains that intelligible species are inseparable from the (known) material forms<sup>67</sup>.

## 2.2. Anonymous masters of arts

In the period of Siger's scholarly activity, the expression "species intelligibilis" became quite common among other authors accepting Averroes' noetics, as is shown by a recently published anonymous commentary (ca. 1270-73)<sup>68</sup>. In this anonymous treatise, the species seems to have replaced altogether the Averroist "intentio"<sup>69</sup>.

Another author employs both "intention" and "intelligible species" in his *Quaestiones de anima* (ca. 1273-77), without considering them as fullblooded equivalents<sup>70</sup>. Both concepts referred to in this way are assimilated to the "cognitio rei", a doctrinal move made by many other medieval authors<sup>71</sup>. However, this anonymous author maintains the instrumental role of the species<sup>72</sup>, and postulates its persistence after the act of knowledge. The actualized intellect is viewed as an "aggregatum" of possible intellect and intelligible

<sup>66</sup> *Quaestiones super librum de causis*, 173-74.

<sup>67</sup> See ch. VI, § 2.3, in vol. II.

<sup>68</sup> *Quaestiones in Aristotelis libros I et II de anima*, ed. M. Giele, in *Trois commentaires anonymes sur le traité de l'âme d'Aristote*, Louvain-Paris 1971.

<sup>69</sup> *Quaestiones in Aristotelis libros I et II de anima*, 54: "Ita quod intelligere perficitur per receptionem et unionem specierum intelligibilium modo quo actus unitur potentiae et potentiae per actum perficitur." As in most contemporary masters of arts, sensible reality is conceived of as the principal source of knowledge.

<sup>70</sup> See, *Quaestiones in libros Aristotelis de anima*, ed. F. van Steenberghen, in *Trois commentaires anonymes*, cit., 161 and 164.

<sup>71</sup> Cf. *Quaestiones in libros Aristotelis de anima*, 161: "(...) quae intentio est intellectio et cognitio rei, qua res per intellectum intelligitur; et quantum ad naturam praedicatur de homine et sic est in eo, et non quantum ad intentionem"; p. 322: "Verum est quod aliqui dicunt quod species intelligibilis quae recipitur in intellectu possibili non est cognitio intellectus, sed est principium operationis intellectus et illud quo intelligit; et similiter dicunt de specie visibili. Tamen mihi ad praesens non videtur hoc, sed quod species intelligibilis sit rei cognitio, quia nihil aliud est in intellectu." Cf. the position of Albert in his criticism of David of Dinant, discussed in ch. II, § 2.1.

<sup>72</sup> *Quaestiones in libros Aristotelis de anima*, 161-162, and 321: "Et ideo ista species non est illud quod principaliter intelligitur, sed est illud quo intelligitur quod quid est, cuius est species seu similitudo."

species<sup>73</sup>. Therefore, the species, as an information-bearing representation, plays a role at various levels of the cognitive process:

Ideo dicendum quod species intelligibilis non est aliud nisi cognitio rei, ut dictum est. In intellectu autem duplex requiritur actus: recipere et intelligere. Similiter in intellectu duplex habitus, primus et secundus: primus est habitus scientiae, secundus autem est actualis consideratio. Unde species intelligibilis secundum esse habituale potest manere apud intellectum, quamvis actu non consideret. Et voco esse habituale inclinationem quam habet intellectus ad speciem intellectualem.<sup>74</sup>

This passage is strongly reminiscent of Thomistic cognitive psychology<sup>75</sup>, although Thomas does not dwell on the precise status of intelligible species present in the soul<sup>76</sup>. Here the intelligible species, which triggers the mind's act, is viewed as the actual grasp of mental content, and may persist after the cognitive act itself. The main difference with Aquinas' psychological views concerns the role of intelligible species in the production of knowledge. Thomas emphasized that the species provides the intellect with an integrated representation of sensory information. Our anonymous author—presumably motivated by the problem of ensuring the intrinsic

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<sup>73</sup> *Quaestiones in libros Aristotelis de anima*, 305-306: "Et est hoc advertendum quod Aristoteles vocat intellectum in actu intellectum aggregatum ex intellectu possibili et specie intelligibili quae perficit intellectum possibilem; et istum intellectum in actu vocat Commentator intellectum speculativum." This notion of an *aggregatum*—a variation on Averroes' *intellectus speculativus* as composed by material intellect and intentions (see, e.g., *In De anima*, 390)—is quite problematic. Our author makes a rather obscure use of it also elsewhere; cf. *Quaestiones in libros Aristotelis de anima*, 161: "(...) dico quod species est aggregatum ex subiecto et intentione"; p. 164: "(...) universale autem in actu est quiddam aggregatum ex natura rei et intentione (...)." On the one hand, the notion of "aggregatum" seems insufficient to account for the unity of the mental act; on the other hand, it suggests a purely physical and, therefore, static inheritance of received and stored mental representations in the intellectual soul, seriously undermining the possibility for the human mind to get involved into other activities at different levels. See also *infra*.

<sup>74</sup> *Quaestiones in libros Aristotelis de anima*, 324.

<sup>75</sup> According to Thomas, the intellect requires the intelligible species for its first act. Once received, they form the "habitus scientiae"; cf. *Summa contra Gentiles*, II, c. 73, 1526. The first act ("scientia") enables the intellect to perform "consideratio"; *Summa contra Gentiles*, I, c. 45, 385.

<sup>76</sup> In his commentary on the *Sentences*, he talked about "species intellectae"; see *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um; quoted in ch. II, § 3.5. In later works, however, he theorizes the "intentio intellecta" as a concept formed in the mind, and triggered by the reception/production of the species. Most likely, he introduced this idea in order to eliminate possible misunderstandings on the instrumental character of the species which, as formal principle, is not primarily known; see ch. II, § 3.1 and 6.



coherence of the cognitive process—elaborates on the presence of species at the various stages of cognition. This strategy will be adopted by John Buridan<sup>77</sup> and, most notably, by later opponents of the intelligible species who ‘rescue’ it as cognitive act or memory content, though questioning its instrumental and mediating function<sup>78</sup>.

The *Quaestiones de anima* of an anti-Averroistic author, active during the same decade (ca. 1272-77), provides conclusive evidence that the various representatives of the Faculty of Arts rapidly assimilated Thomas’ doctrine<sup>79</sup>. This specific author interprets the intellect’s potentiality along the lines suggested by Thomas: status and function of the species are grounded in the necessary mediation between the intellect and its object<sup>80</sup>. He also seems to endorse—paradoxically, in an Averroistic key—the ‘double’ consideration of the species developed by Thomas in the commentary to the *Sentences*<sup>81</sup>. Furthermore, in addition to this unconditional acceptance of the species as *medium quo*, he upholds Thomas’ view that no immediate knowledge of the “species rei” is possible:

(...) ita quod quidditas primo et principaliter intelligitur mediante specie; et tunc ipsa species intelligibilis ex consequenti. Et nota quod non est ita intelligendum quod species rei et intellectus sunt idem, quod intellectus intelligat speciem rei; sed intellectus intelligit primo et principaliter quidditatem rei mediante specie, et tunc, ex quadam relucentia intellectus, intellectus intelligit speciem rei.<sup>82</sup>

In this context, “species rei” is obviously a synonym for “intelligible species”. Observations of this sort are open to criticism; very likely, they occasioned the criticism of Henry of Ghent

<sup>77</sup> Cf. ch. IV, § 3.2.

<sup>78</sup> See the position of, e.g., Peter Olivi, Godfrey of Fontaines and Radulphus Brito, discussed in the next section, and the Renaissance authors: Agostino Nifo, Ludovico Buccaferrea, Francesco Vimercato, Giacomo Zabarella, and Francesco Piccolomini.

<sup>79</sup> *Quaestiones super Aristotelis librum de anima*, ed. B. Bazán, in *Trois commentaires anonymes sur le traité de l'ame d'Aristote*.

<sup>80</sup> *Quaestiones super Aristotelis librum de anima*, 481.

<sup>81</sup> *Quaestiones super Aristotelis librum de anima*, 491: “unde in quantum intellectus agens abstrahit speciem a phantasmatibus, illa species est singularis, intelligendo speciem quam abstrahit; tamen respectu individuorum plurimorum, quae individua illa species repraesentat, illa species est universalis; et ita facit universalitatem in rebus.” Cf. *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um, quoted in ch. II, § 3.5. For the “facere universalitatem in rebus”, cf. Averroes, *In De anima*, 12.

<sup>82</sup> *Quaestiones super Aristotelis librum de anima*, 481-82.

and other authors, who maintained that the species prevents any veridical knowledge of sensible essences.

The works reviewed in this section underscore that sensible reality is the only source for the contents of intellectual knowledge: (intelligible) species or intentions, abstracted from “*intentiones imaginatae*” or from phantasms, are in one way or another *acceptae a rebus*. This variety of the species doctrine—detached from the context of Thomas’ metaphysical views on participation and first principles, though possibly influenced by his psychological thought—was an ideal target for the neo-Augustinian opposition to the species. In this connection, recall that the condemnation of 1277 acted as a binding force for the growing complaints against psychological views with a marked ‘naturalistic’ or ‘philosophical’ flavour, potentially conflicting with the theological character of an anthropology inspired to patristic, notably Augustinian, psychological views.

### 2.3. *Giles of Rome: illuminated phantasms and intelligible species*

The exile of Giles of Rome<sup>83</sup> from the Parisian faculty of theology (1279-1285) shows how the 1277 condemnation weighed heavily on philosophical discussions. Giles was probably a student of Thomas in the years 1269-1272, and was counted among his disciples too<sup>84</sup>. Fairly recently, he has been recognized as the founder of an independent school of thought, which attempted to reconcile Peripatetic and Augustinian conceptions without radically twisting

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<sup>83</sup> Aegidius Romanus, ca. 1243/7—1316; joined the Hermits of Saint Augustine at the age of fourteen; sent to Paris as a student in 1260; completed study of liberal arts, 1266; studied theology, probably under Thomas, 1269-1272; affected by the condemnation of 1277; resumed teaching as master of theology at Paris between 1285-91 and was the Augustinians’ first regent master in theology; elected General of his order in 1292.

<sup>84</sup> On the relation with Thomas, cf. G. Bruni, “Egidio Romano e la sua polemica antitomista”, in *Rivista di filosofia neoscolastica* 27(1934), 239-251; P.E. Nash, “Giles of Rome: auditor and critic of St. Thomas”, in *Modern Schoolman* 28(1950-1), 1-20; V. Sorges, “L’astrazione nella gnoseologia di Egidio Romano”, in *Rivista di filosofia neoscolastica* 72(1980), 670-80, on pp. 670-71, 678-79. An exhaustive bibliography on this subject is found in A.D. Conti, “Intelletto ed astrazione nella teoria della conoscenza di Egidio Romano”, in *Bollettino dell’Istituto Storico Italiano per il Medio Evo e Archivio Muratoriano*, n° 95, Roma 1989, 123-164, on p. 125, note 5.

the former<sup>85</sup>. The criticisms of English Dominicans such as Thomas Sutton and Robert of Orford<sup>86</sup>, in spite of his defence of the species against Henry of Ghent, were a predictable reaction to this formidable program.

Giles' doctrine of the species bears significant similarities to Thomas' view. This is particularly evident in the works written before and some time after Tempier's condemnation<sup>87</sup>. Indeed, these writings do not contain the slightest criticism of Thomas' position, and present the species doctrine with nearly the same wordings as originally used by Thomas. In *De intellectu possibili contra Averroim*, Giles observes that the intellect's act depends on the intelligible species<sup>88</sup>. In *Quodlibeta*, the necessity of the species is argued for "ratione obiecti intellecti"<sup>89</sup>. In the commentary on the second book of the *Sentences*, Giles uses similar arguments: (i) "ut suppleat praesentiam obiecti", and (ii) for the production of the mental act<sup>90</sup>. The conviction underlying these arguments is that abrupt changes from material to immaterial reality are impossible; therefore,

<sup>85</sup> A. Zumkeller, "Die Augustinerschule des Mittelalters: Vertreter und philosophisch-theologische Lehre (Übersicht nach dem heutigen Stand der Forschung)", in *Analecta Augustiniana* 27(1964), 167-262, on pp. 169-181.

<sup>86</sup> R. Egenter, *Die Erkenntnispsychologie des Aegidius Romanus*, Regensburg 1926, 50; A. Zumkeller, "Die Augustinerschule des Mittelalters", 179-181. See Robert d'Orford, *Reprobationes dictorum a fratre Egidio in primum Sententiarum*, ed. A.P. Vella, Paris 1968.

<sup>87</sup> For the dates of his works, see R. Egenter, *Die Erkenntnispsychologie des Aegidius Romanus*, 1-2; R. Friedemann, "Het «intellectus noster est potentia pura in genere intelligibilium» van Averroës en de «ratio intelligendi» van Aegidius Romanus", in *Augustiniana* 8(1958), 48-110, on pp. 49-52; and C.J. Leonard, "A thirteenth-century notion of the agent intellect: Giles of Rome", in *New Scholasticism* 37(1963), 327-358; R. Hissette, "Albert le Grand et Thomas d'Aquin dans la censure parisienne du 7 mars 1277", cit., 237; Aegidius Romanus, *Opera omnia*, vol. III.1: *Apologia*, ed. R. Wielockx, Firenze 1985, 229-240; S. Donati, "Studi per una cronologia delle opere di Egidio Romano, I: Le opere prima del 1285. I commenti aristotelici", in *Documenti e studi sulla tradizione filosofica medievale* 1(1990), 1-111. Summarizing, the following dates seem probable: *In I Sent.*, 1271-73; *De intellectu possibili*, 1271-73; *Super de anima*, ca. 1276; *Quaestiones de cognitione angelorum*, ca. 1285-90; *In II Sent.*, not before 1309.

<sup>88</sup> *De intellectu possibili contra Averroim*, Venetiis 1500, 91va-93rb; cf. 93rb: "(...) principalius egreditur actus intelligendi ab ipsa specie intelligibili quam ab ipso intellectu (...)". Typical of this period is the conviction concerning the (alleged) presence of the notion of "species intelligibilis" in Averroës; cf. 92ra.

<sup>89</sup> *Quodlibeta castigatissima*, Venetiis 1504, II, q. 21, 2b.

<sup>90</sup> *Super librum II Sententiarum*, Venetiis 1581, dist. 24, p. 1, q. 1, a. 2, 259a. The necessity of the species for the presence of the object to the intellect is one of Duns Scotus' central arguments; cf. ch. IV, § 1.1.

species are needed for a gradual (mental) appropriation of cognitive contents<sup>91</sup>.

In view of this common background, more fine-grained differences between Giles and Aquinas can be discerned. Occasionally, Giles assimilates the intelligible species to the intellective act<sup>92</sup>, though the distinction between representation and act remains fundamental for the graduality of human knowledge<sup>93</sup>. Giles deviates significantly from Aquinas' psychological views when he describes the agent intellect as "habitus principiorum"<sup>94</sup> and especially when he maintains that it contains intelligible species "virtually"<sup>95</sup>. This latter claim raises a basic conflict with Aquinas' theory of knowledge (since the agent intellect is no longer conceived of as a mere wired-in capability for performing mental operations), and shows the strong influence exerted on Giles by Augustinian and Neoplatonic views of the mind as an actively knowing faculty. This influence is manifest also in his doctrine of the twofold illumination of the agent intellect: one type of illumination is directed towards

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<sup>91</sup> Also in *Expositio super libros de anima*, Venetiis 1500, 65ra-75rb, Giles accepts the species doctrine: natural things cannot be known without an "intentio abstracta", "conceptus" or "species" (68ra). Cf. also *Quodlibeta* Venetiis 1504, III, q. 13, 39ra-vb, where Giles defends the species theory. For discussion of the characterization of the species as contemporarily singular and universal in Giles of Rome, see Egenter, *Die Erkenntnispsychologie des Aegidius Romanus*, 52, and note 269.

<sup>92</sup> See *In II Sent.*, 259b and *Expositio super libros de anima*, 68rb-va. Just like Augustine, he identifies the sensible species with the act of sense perception; see *Quodlibetum* V, q. 21 and for discussion, see Egenter, *Die Erkenntnispsychologie des Aegidius Romanus*, 8f, and 52-55. Significantly, the Collegium Conimbricense, *Commentarii in tres libros de anima*, cit., refers on p. 337a to Giles for the identification of act and species. See also Aversa, *Philosophia metaphysicam physicamque complectens quaestionibus contexta*, 803.

<sup>93</sup> See *In II Sent.*, l.c., 260a.

<sup>94</sup> *Expositio super de anima*, 69va. Thomas excludes this interpretation in *In De anima*, III, lectio X, 729.

<sup>95</sup> *Expositio super de anima*, 74va; cf. *In librum De causis*, prop. 19, dub. 2, quoted in Friedemann, "Het «intellectus noster est potentia pura in genere intelligibilium» van Averroës en de «ratio intelligendi» van Aegidius Romanus", 79. The agent intellect in Giles' thought is discussed by C.J. Leonard, "A thirteenth-century notion of the agent intellect: Giles of Rome", in *New Scholasticism* 37(1963), 327-358; Z. Kuksewicz, "Criticism of Aristotelian psychology and the Augustinian-Aristotelian synthesis", in *Cambridge History of Later Mediaeval Philosophy*, 623; Sorges, "L'astrazione nella gnoseologia di Egidio Romano", 677; Friedemann, "Het «intellectus noster est potentia pura in genere intelligibilium» van Averroës en de «ratio intelligendi» van Aegidius Romanus", 79 and 90. Giles dispositional innatism will reappear, in a more radical form, in James of Viterbo's doctrine of innate aptitudes; see § 4.5. It was noted before, that Averroës theorized some kind of innate knowledge in the "intellectus materialis"; cf. *In De anima*, 407.

the phantasms in order to enable them to generate the intelligible species, while the other one triggers the operations of the possible intellect once the latter is actualized by the species<sup>96</sup>. In a later work, Giles regards this second illumination as mediated through the intelligible species<sup>97</sup>.

Giles' most significant contribution to the medieval discussion on mental representation concerns the ways in which intelligible species are produced—more precisely, his explanation of the relation between sensory phantasms and agent intellect, analyzed in *Quodlibetum* V, q. 21 (1290).

Like Augustine, Giles allows for the “sensibilia” to affect the senses “intentionaliter”. Sensible things have a material existence; nevertheless, they are capable of inducing in the senses a change belonging to the intentional order. A similar change is brought about by the causal action of the senses upon the inner senses, that is, on common sense and phantasy. In principle, also the phantasy—organized and embedded in physiological structures, and yet containing the multiplied species in “spiritualiori modo”—is able to induce a change in the possible intellect. Phantasy, however, is not fully equipped for this operation. If it were, the inner sense would operate “ultra suam naturam”<sup>98</sup>.

Giles holds that the senses cannot impress anything upon the intellect. Quite surprisingly, however, he envisages the possibility of some “contactus” between intellect and phantasy. Thus, he allows for the phantasy to transcend its physiological bounds. Indeed, in order to ensure the objective reference of cognitive contents signi-

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<sup>96</sup> *Expositio super de anima*, 66ra, 75ra; *Quodlibetum* II, q. 22. The idea of this second type of illumination might be due to Themistius' influence; cf. *Paraphrasis in De anima*, lat. ed., 224f, in particular, p. 235; for discussion, see C.J. Leonard, “A thirteenth-century notion of the agent intellect: Giles of Rome”, 352-53. Another view of Giles seems to be induced by the influence of the Arabic commentators, namely that of the agent intellect as form of the possible intellect; cf. Egenter, *Die Erkenntnispsychologie*, 43-44. Notice, however, that both the twofold illumination of the agent intellect as well as its being the form of the possible intellect were already theorized by Albert the Great; cf. ch. II, § 2.1

<sup>97</sup> *Quaestiones de cognitione angelorum*, Venetiis 1503, q. 14, 117ra: “Lumen ergo intellectus agentis, quod est in ipsa anima, non recipitur in intellectu possibili nisi mediantibus speciebus aliarum rerum. Species ergo intelligibiles, ut recipiantur in intellectu possibili, indigent lumine intellectus agentis ratione phantasmatum a quibus derivantur, quae sunt intelligibilia in potentia, et quae sine tali lumine non possunt movere intellectum possibilem.”

<sup>98</sup> *Quodlibetum* V, q. 21, 73ra-73vb. Cf. Augustine, *De Genesi ad litteram*, 463.

fying sensible reality, Giles argues that phantasy is capable of providing the mind with an integrated representation of sensory information, or of moving the possible intellect—as stated in *De cognitione angelorum* and in his commentary on the *Sentences*—by virtue of the light of the agent intellect. The very possibility of an illumination of sensory representations by an immaterial intellect is grounded upon the supposition that phantasy and intellect, being human cognitive faculties, both have their ‘roots’ in the same soul<sup>99</sup>.

While Thomas emphasized the operation of the agent intellect in intellectual abstraction, Giles focuses on the phantasms’ acquired capability of moving the possible intellect by imprinting their similitudes<sup>100</sup>. Just as Thomas, Giles seems to rule out any transfer of representations or species from phantasy to intellect. But unlike Thomas, he considers the phantasm, insofar as it contains the “natura rei”, capable of eliciting an intelligible similitude of itself in the possible intellect<sup>101</sup>. Indeed, Giles holds that the senses already contain the intentions which come to play an effective role only at a later stage in the intellect’s act. In other words, the similitude of the substantial form, inaccessible to sense perception, is present in the senses only “virtually”<sup>102</sup>. This does not mean, however, that sensory representations, once spiritualized, are immediately converted into intelligible species.

According to Giles, a material thing communicates itself completely throughout the process of knowledge; the senses, however, can only grasp its accidents, while the intellect is capable of appre-

<sup>99</sup> *Quodlibetum* V, 73vb-74ra.

<sup>100</sup> See *In II Sent.*, l.c., 259a: “(...) quod phantasmata in virtute intellectus agentis imprimunt species intelligibiles in intellectu possibili, (...)”; *De causis*, 83: “Nam phantasmata, quae sunt quid corporale, in virtute intellectus agentis imprimunt similitudines suas in intellectu nostro possibili.” (quoted in Egenter, *Die Erkenntnispsychologie des Aegidius Romanus*, 87, nt. 242.) Cf. also *Quodlibetum* II, q. 22; *Quodlibetum* III, q. 12. See already, Albert, *De anima*, III, tr. 2, c. 18, 204a. That the phantasms can impress something upon the intellect is ruled out in *Quodlibetum* V, q. 21, 73vb.

<sup>101</sup> As is well known, Aristotelian physics rules out a transfer of accidents from one subject to another. Indeed, Giles often speaks of the phantasms as occasioning the intelligible species to arise (“fieri”) in the possible intellect; cf. *De cognitione angelorum*, q. 14, 116vb.

<sup>102</sup> In Roger Bacon, this applies to the “formae insensatae”, that is, species produced by “qualitates complexionales” which, received but not ‘sensed’ by the external senses, are grasped only by the “aestimatio”; see ch. II, § 2.3.

hending its substantial essence. The accidental features of material reality act in virtue of substantial forms, in the same way as heat produced by fire may cause another fire. The “*intentiones accidentium*” present in the phantasy act in virtue of both the agent intellect and the substantial form in which they are grounded. This twofold determination enables them to produce the intelligible species by means of which the intellect knows substantial reality<sup>103</sup>.

With this psychological analysis of phantasy and intellect, both rooted in the essence of the soul, Giles guarantees the possibility of an interplay between sense perception and conceptual capabilities in the production of mental acts; thus, sensory representational devices effectively contribute to forming cognitive contents. Notice that this seemingly naturalistic theory is grounded in a Neoplatonically oriented noetics, which attributes to the agent intellect a double illumination and an innately ‘virtual’ presence of intelligible species. It cannot be ruled out that Giles, with his emphasis on the agent intellect as spiritual light, intended to bridge the gap between Aristotelian psychology and Augustine’s illumination theory.

Thomas, though distinguishing between active and receptive features, holds that the human mind as a whole abstracts and receives cognitive contents. Giles, in contrast, maintains that an illuminated sensory image ‘impresses’ its similitude upon the receptive intellect<sup>104</sup>, which implies quite different roles for the two ‘parts’ of the human mind. The agent intellect, which illuminates both phantasm and possible intellect, is the chief causal factor in the generation of knowledge; the possible intellect is merely receptive with respect to the inner senses’ impact and the active mind’s illumination.

Giles’ view of the role of the agent intellect in the production of intelligible species is rather puzzling; at first glance, it even seems inconsistent. On the one hand, the agent intellect does not extract cognitive contents from sensory representational devices, and merely enables the latter to produce cognitive contents in virtue of

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<sup>103</sup> *De cognitione angelorum*, 81va-b.

<sup>104</sup> This may be viewed as a consequence of his Augustinianism; cf. also C.J. Leonard, “A thirteenth-century notion of the agent intellect: Giles of Rome”, cit.

its light<sup>105</sup>; on the other hand, the agent intellect produces mental representations, and thus can be said to contain them virtually<sup>106</sup>. I think, that a coherent reading of these apparently conflicting claims can be given, however. As an information-bearing entity, the intelligible species depends essentially upon sensory representation. Nonetheless, although the latter is supposed to impress its similitude upon the possible intellect, the effect of this operation (the intelligible species) cannot be identified with an unveiled phantasm. The illumination of the agent intellect—as Giles' followers will point out—is a *positive* action, that is to say, a substantive elaboration of sensory information. Therefore, it is a causal antecedent in the generation of species.

Giles attempts a balanced *rapprochement* of Aristotle's and Augustine's cognitive psychologies. His mediating position is adopted by other Augustinian Hermits<sup>107</sup>; it recurs in authors such as John Capreolus, in other 15th-century Thomists, and—during the 16th century—in Franciscus Sylvester of Ferrara<sup>108</sup>. Immediate developments of his specific views on the production of mental representations are to be found in 14th-century Averroism, that is, in Jandun and his followers.

#### 2.4. William de la Mare's *Correctorium* and the first reactions

Aquinas' view of intelligible species as formal principles needed for producing mental contents was not a target of early anti-Thomistic arguments. This is confirmed, for example, by William de la Mare's famous *Correctorium* (ca. 1278-79), a critical evaluation of Thomas' philosophical and theological thought from a Franciscan point of view<sup>109</sup>.

<sup>105</sup> See *Quodlibetum* V, q. 21 and *In II Sent.*, l.c.

<sup>106</sup> See *Expositio super de anima*, 74va.

<sup>107</sup> See Agostino Trionfi (§ 4.5), Thomas of Strasbourg (ch. IV, § 3.3) and Alphonsus Vargas Toletanus (ch. IV, § 3.5). Notice that in 1287 Giles' doctrinal thought became canonical for the Augustinian Hermits.

<sup>108</sup> Cf. ch. V, § 2 and ch. VII, § 2.3.

<sup>109</sup> William de la Mare taught at Paris (ca. 1274-1275) and probably at Oxford; see F. Roensch, *The Early Thomistic School*, Dubuque (Iowa) 1964, 183-185. The complete text of this pamphlet is reported by the author of the first reaction to William's *Correctorium*, the *Correctorium corruptorii* "Quare", ed. P. Glorieux, Kain 1927, written by Richard Knapwell.



This work contains over a hundred articles, a substantial number of which are devoted to psychological issues. Thomas' doctrine of intelligible species as such is never criticized<sup>110</sup>. As a matter of fact, William de la Mare argued for the necessity of a formal mediation in sense perception and intellectual knowledge, and posited species also for the apprehension of objects—such as the singulars and God—which Thomas viewed as beyond the scope of his doctrine<sup>111</sup>. The four published reactions to William's *Correctorium* only marginally touch on this aspect of Thomas' thought<sup>112</sup> and merely report, when necessary, the main lines of his views of (intelligible) species<sup>113</sup>. However, the large number of quotations from Anselmus and Augustine in the articles concerning Thomas' psychology are a clear indication of a rapidly changing spiritual environment.

A more original approach to themes relevant for the species doctrine can be found in the reaction of John of Paris to De la Mare's attack<sup>114</sup>. This author examines the species doctrine, from a fairly pronounced Augustinian perspective, also in his later comment on the *Sentences*<sup>115</sup>. John defends the species as a necessary

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<sup>110</sup> For a survey of the main divergences between the Franciscan author of the *Correctorium* and his Dominican opponents, who deemed him to be a "corruptor", see F. Roensch, *The Early Thomistic School*, ix. According to Hissette, "Albert le Grand et Thomas d'Aquin dans la censure parisienne du 7 mars 1277", 230, the context of De la Mare's criticisms is not the 1277 (as is generally supposed) but rather the 1270 condemnation.

<sup>111</sup> *Correctorium corruptorii* "Quare", art. I and II, pp. 1-17. The need for (intelligible) species was a controversial issue in the medieval debate on the beatific vision of Christ; see also ch. IV, § 1.1.

<sup>112</sup> In addition to the mentioned "Quare", see: *Correctorium corruptorii* "Circa" de Jean Quidort de Paris, ed. J.-P. Müller, Roma 1941; [William Macclesfield], *Correctorium corruptorii* "Quaestione", ed. J.-P. Müller, Roma 1954; [R. Orford], *Correctorium corruptorii* "Sciendum", ed. P. Glorieux, Paris 1956. These works were written before 1285; for discussion see F. Roensch, *The Early Thomistic School*, ch. II-III. See also Rambert de' Primadizzi de Bologne, *Apologeticum Veritatis contra corruptorium*, ed. J.P. Müller, Vatican 1943. One of the reasons why the authors of these works do not explicitly defend the intelligible species, may be that they focus their attention on De la Mare, without addressing—or perhaps simply ignoring—the criticisms of, e.g., Henry of Ghent.

<sup>113</sup> Cf. the rather elementary notions in "Quare", 12.

<sup>114</sup> See, for instance, *Correctorium corruptorii* "Circa", pp. 15-16 for his identification of abstraction and illumination; and *idem*, p. 5 for his opposition to a "visio Dei per speciem", which according to John squarely entails Pelagianism, because it postulates that the state of beatitude can be acquired with purely natural means.

<sup>115</sup> Jean de Paris, *Commentaire sur les Sentences*, Reportation, Livre I, ed. J.-P. Muller, Romae 1961.

“quo” against Henry of Ghent<sup>116</sup>, and emphasizes the transcendent origin of the agent intellect<sup>117</sup>, thereby proposing in effect a synthesis of Peripatetic and Augustinian psychologies<sup>118</sup>. In his remarks on species Augustine’s influence is quite evident:

Et hoc tenendo dicimus quod intelligimus per speciem duplicem: unam in memoria, quae est parens, aliam expressam in acie cogitantis, quae est proles, ex qua sequitur actio intelligendi. Unde ista se habent per ordinem: obiectum seu res quae intelligitur, species in memoria, species in acie cogitantis et ipsa actio vel operatio intellectus mediante specie, quae actio est intelligere.<sup>119</sup>

It has been established that Jean’s work was known to Caietan<sup>120</sup>. Its overall influence, however, has been rather marginal.

## 2.5. *Uncritical assimilations*

Examples of conventional and less interesting views on intelligible species, quite commonly held at the turn of the century, can be found in the writings of Bernard of Trilia<sup>121</sup> and Jacques de Thérines<sup>122</sup>. The secular theologian Simon Faversham (1240-1306) seems totally unperturbed by the psychological discussions engendered by the 1277 condemnation when he qualifies, in his *Quaestiones super tertium de Anima* (written probably in the 1290’s), the Thomistic doctrine as the “communis opinio” on intelligible species<sup>123</sup>.

<sup>116</sup> *Commentaire sur les Sentences*, I, dist. 3, q. 10, p. 75-77.

<sup>117</sup> *Commentaire*, I, dist. 3, q. 12, p. 86.

<sup>118</sup> Cf. *Commentaire*, I, dist. 27, q. 3, p. 292.

<sup>119</sup> Cf. *Commentaire*, I.c., p. 299-300.

<sup>120</sup> Cf. M. Grabmann, “Die Stellung des Kardinals Cajetan in der Geschichte des Thomismus und der Thomistenschule”, in *Mittelalterliches Geistesleben*, vol. II, München 1936, 601-613.

<sup>121</sup> See his *Quaestiones de cognitione animae separatae a corpore*, ed. St. Martin, Toronto 1965, q. 1. Bernard of Trilia, O.P., ca. 1240 Nîmes—1292; studied philosophy and theology at the university of Paris, ca. 1260-65; lecturer at various Dominican convents in Languedoc and Provence, 1266-1276; lectured at the convent of Saint-Jacques between 1282-87. For discussion, see Roensch, *The Early Thomistic School*, 289f.

<sup>122</sup> *Quodlibets I et II*, ed. P. Glorieux, Paris 1958, p. 104-107; these Quodlibets were written in the first decade of the 14th century.

<sup>123</sup> Simon de Faversham, *Quaestiones super tertium De anima*, ed. D. Sharp, in *Archives d’histoire doctrinale et littéraire du Moyen Age* 9(1934), 307-368. On p. 316 he rejects innatism, and on p. 331 intellectual memory is defended against Avicenna. The species is conceived as *quo*, and not as *quod intelligitur* (p. 333); cf. 367: things are intellectuated *per speciem*. Faversham’s affinity with Thomas is discussed by J. Ven-

## § 3. FIRST SYSTEMATIC ATTACKS

3.1. *Neo-augustinian psychology—John Peckam*

The criticisms levelled against intelligible species at the turn of the 13th century have been regarded as an expression of the then dominant (neo-)Augustinian views. However, it would be misleading to assert that there was a sharp division of Aristotelians versus Augustinians among theologians scholarly active during the last quarter of that century. The authority of Augustine was unquestionable, like in any other medieval period, and yet it was not exclusive. Indeed, several theses of mixed origin and content accreted onto the corpus of Augustine's works and came to share the authority conferred to the latter. The main reason for these additions is that many salient issues of the 13th-century philosophical debates—the intelligible species is just a specific case—were not discussed by Augustine<sup>124</sup>. The doctrines forming what came to be known as 'Augustinianism' developed during the first half of the 13th century, and were occasioned by the appearance of Aristotle's works<sup>125</sup>. Indeed, the first systematic opposition against the "species intelligibiles" arises, with Henry of Ghent<sup>126</sup> in 1279, in a cultural environment dominated by the psychological conceptions of authors such as Jean de la Rochelle and Bonaventure.

A significant example of Augustinian psychological theorizing from that period is the work of John Peckam<sup>127</sup>, one of the most

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nebusch, "Die *Quaestiones in tres libros De anima* des Simon Faversham", in *Archiv für Geschichte der Philosophie* 47(1965), 20-39, on p. 37. For Faversham's Albertistic tendency, cf. J. Pinborg, "Simon of Faversham's sophisma 'Universale est intentio': a supplementary note", in *Mediaeval Studies* 33(1971), 360-364.

<sup>124</sup> Cf. F. Roensch, *The Early Thomistic School*, 172 who claims that neo-Augustinianism is a broadly confused complex of heterogeneous theses often erroneously accepted on the authority of Augustine, when actually derived from Neoplatonic, Jewish, and Arabic sources, though generally considered to be in accord with Catholic belief.

<sup>125</sup> For more information regarding psychological themes, see ch. II, § 1.

<sup>126</sup> Henry's opposition against the species begins with *Summa quaestionum ordinarii*, a. 36 and *Quodlibetum* IV. See P. Stella, "La prima critica di Hervaeus Natalis O.P. alla noetica di Enrico di Gand: il *De intellectu* del cosiddetto *De quatuor materiis*", in *Salesianum* 21(1959), 125-170, on p. 127.

<sup>127</sup> Johannes Peckam, ca. 1225—1292; archbishop of Canterbury, 1278-1292; renewed Kilwardby's condemnation in 1284; excommunicated Knapwell, author of the *Correctorium corruptorii "Quare"* in 1286; see Roensch, *The Early Thomistic*

important researchers of 13th-century optics, together with Roger Bacon and Witelo<sup>128</sup>. Like his celebrated precursors, whose role in the prehistory of the species debate was analyzed in the preceding chapter, Peckam develops—without achieving a satisfactory synthesis—psychological views relying on an Augustinian interpretation of Aristotelian noetics. In particular, he reflects on the distinction between possible and agent intellect, and argues that divine illumination is a necessary condition for human knowledge<sup>129</sup>. In cognitive psychology, his main goal is to show that the views of Aristotle, Avicenna and Augustine on knowledge acquisition are mutually consistent<sup>130</sup>.

In his *Quaestiones tractantes de anima*, Peckam characterizes the active principle of human mind as the soul's capacity of transforming itself into the similitude of its possible objects<sup>131</sup>. Elsewhere in the same work, the (human) agent intellect is viewed as possessing innate principles, which, together with the eternal light, yield the formal principle of intellectual knowledge<sup>132</sup>. However, both active and receptive rational capacities are integrated in the human material intellect:

Dico quod divisio intellectus per agentem et possibilem et rationis <per> superiorem et inferiorem, quamvis sit divisio eiusdem, non tamen per differentias eiusdem generis et rationis. Intellectus siquidem agens, de quo Philosophus loquitur, non est usquequaque pars animae, sed Deus est, sicut credo, qui est lux omnium mentium,

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*School*, 15-17. His psychological works are: *Quaestiones tractantes de anima* (ca. 1269) and *Tractatus de anima* (probably written between 1277-1279).

<sup>128</sup> Cf. D.C. Lindberg, "Alhazen's theory of vision", cit., and his "Introduction" to the reprint of Alhazen's *De aspectibus*.

<sup>129</sup> *Quaestiones tractantes de anima*, ed. H. Spettmann, Münster 1918, 51, and 71ff. For discussion: H. Spettmann, *Die Psychologie des Johannes Peckam*, Münster 1919, 55-57; Bowman, "The development of the doctrine of the agent intellect", 266 and Rohmer, "La théorie de l'abstraction", 178-180. See, for a similar Aristotelian-Augustinian synthesis, the work of R. Bacon; cf. ch. II, § 2.3.

<sup>130</sup> *Quaestiones tractantes de anima*, 70-71: "Ut sic verificetur verbum Avicennae dicentis, quod formae intelligibiles maneant super intellectum; verum etiam sic verbum Aristotelis ponentis species abstrahi a phantasmate, verum etiam sit verbum Augustini, qui dicit vi rapi cogitationem."

<sup>131</sup> *Quaestiones tractantes de anima*, 73: "Est tamen in anima rationali aliquid activum, quod dico potentiam illam, per quam nata est se in omnium intelligibilium similitudinem transformare."

<sup>132</sup> *Quaestiones tractantes de anima*, 71: "Quoniam licet actus vel operatio sit intellectus agentis spoliare phantasmata, principalior tamen est operatio eiusdem manifestare principia per se nota in lumine suo"; cf. Bowman, "The development of the doctrine of the agent intellect", 266-7.

a quo est omne intelligere. (...) Dico ergo quod intellectus materialis amplectitur rationem superiorem et inferiorem <et> intellectus agens creatus suo modo perficit utramque.<sup>133</sup>

Here Peckam is distinguishing between an uncreated agent intellect, identified with God, a created agent intellect, and an active principle of the rational soul, which is assimilated to Augustine's superior *ratio*<sup>134</sup>. This is a rather bewildering move since, at an earlier stage<sup>135</sup>, Peckam identified the created agent intellect with the active feature of the material intellect. Presumably his intention was to convey that the active principle of the rational soul, in its quality of "intellectus agens", mediates the rational soul with the "superiora".

In the *Tractatus de anima*, Peckam reiterates the distinction between uncreated and created agent intellect. Here, also, the active power of the human mind is the abstraction of species from sensory images—a precondition for the mind's capacity to transform itself into a similitude of all intelligibles<sup>136</sup>. This shows that Peckam does not reject the abstraction of intelligible species, though knowledge acquired in this way does not go beyond sensible reality. In fact, knowledge of God requires innate species<sup>137</sup>.

<sup>133</sup> *Quaestiones tractantes de anima*, 73.

<sup>134</sup> A similar conception will be advanced by John Buridan; see ch. IV, § 3.2, and M.J.F.M. Hoenen, "Die Intellektlehre des Johannes Buridan—Ihre Quellen und historisch-doktrinären Bezüge", in *John Buridan*, eds. E.P. Bos and H.A. Krop, Nijmegen, 16pp. (forthcoming).

<sup>135</sup> *Quaestiones tractantes de anima*, 71: "Ergo idem est ratio superior, qui est intellectus agens."

<sup>136</sup> *Tractatus de anima*, ed. G. Melani, Firenze 1948, 20: "Duplicem enim pono intelligentiam agentem, increatam et creatam, ut iam patet, et hoc est intellectum agentem species a phantasmate abstrahere. Et intellectui possibili uniri, idest intellectum a phantasmatibus excitatum in eorum assimilationem convertere suam possibilitatem (...)" ; cf. also *Quaestiones tractantes de anima*, 73 (quoted above). For a similar view, cf. Jean de la Rochelle, *Summa de anima*, II, c. 37, 290.

<sup>137</sup> See *Quaestiones tractantes de anima*, 86-87: "Igitur res intelligibiles per se <seu> spirituales non intelliguntur per species abstractas, sed si sunt essentialiter et praesentialiter in anima cognoscuntur per species in intelligentia expressas. Alia vero omnia intellectualia cognoscuntur per similitudines vel innatas vel impressas vel relictas vel collectas." For species impressed by superior intellects, see Gundissalinus in ch. II, § 1.1. See also pp. 84-85 for a reference to the Augustinian "species in acie cogitantis"; cf. § 1. For a similar position, see Bonaventure; cf. ch. II, § 1.7.

### 3.2. Henry of Ghent's criticisms of impressed species

Henry of Ghent<sup>138</sup> addresses more systematically than Peckam the issue of the relation between (the production of) mental representations and the grasp of veridical cognitive contents. The powerful criticism of the necessity of formal mediating principles in intellectual knowledge is a focal point of his epistemology and has therefore become a familiar issue in studies on Henry<sup>139</sup>. In view of this fact, I shall not give a comprehensive account of his position here: I concentrate on his understanding of the species doctrine, the nature of his arguments, and the new problems arising from his criticisms.

It is important to notice that there is no scholarly consensus on the details of Henry's criticism<sup>140</sup>. It is rather surprising that Henry, at the outset of *Quodlibetum* IV.7, does not reject the species as such<sup>141</sup>, vigorously questioning only the necessity of *species im-*

<sup>138</sup> Henricus de Gandavo, ca. 1217—1293 Tournai; secular Scholastic philosopher and theologian; after his early studies at the cathedral school of Tournai, he studied arts at Paris, then theology, probably under William of Auvergne; as regent master in theology, he lectured at Paris from 1276 to 1292; although he was canon of Tournai from 1267, archdeacon of Bruges in 1276 and of Tournai in 1278, he was intimately connected with university affairs; he actively supported the condemnation of 1277 and was an unflinching opponent of the mendicant orders.

<sup>139</sup> See, for instance, F. Prezioso, *La "species" medievale e i prodromi del fenomenismo moderno*, 7; G. Canizzo, "La dottrina del *verbum mentis* in Enrico di Gand", in *Rivista di filosofia neoscolastica* 54(1962), 243-266. For a study of the various stages in Henry's doctrinal activity, see T. Nys, *De werking van het menselijk verstand volgens Hendrik van Gent*, Leuven 1949, 51-98, and Canizzo, "La dottrina del *verbum*", 245.

<sup>140</sup> A clear example is Prezioso, *La "species"*, who devotes the first chapter to Henry. This author is convinced that species are superfluous and dangerous, and this opinion interferes with a genuine scientific analysis. Moreover, it seems that J.V. Brown, "Abstraction and the object of the human intellect according to Henry of Ghent", in *Vivarium* 11(1973), 80-104, on p. 87 does not detect the change in Henry's doctrinal positions before and after 1279. This view is proposed again in his "Intellect and knowing in Henry of Ghent", in *Tijdschrift voor Filosofie* 37(1975), 490-512, and 692-710, on p. 510-511, note 69, in rather enigmatic wordings: "Henry has a doctrine of *species intelligibilis* as an intrinsic part of his noetics. This *species intelligibilis* is certainly unlike its counterpart in Thomas Aquinas; unlike the *species intelligibilis* in Bonaventure; probably unlike the *species intelligibilis* in any of his predecessors [sic]. In short, it just «behaves peculiarly»." In this article, Brown rightly underscores Henry's critique of an *impressed* intelligible species; cf. also pp. 693 and 696f. For a cursory survey of Henry's general epistemological views, see Tachau, *Vision and Certitude*, 28-39.

<sup>141</sup> Where sense perception is concerned, Henry of Ghent accepts the entire process of the multiplication of species, terminating in the production of phantasms; for discussion, see Tachau, *Vision and Certitude*, 30.

*pressae* in intellectual knowledge by appeal to Augustine's authority and the Aristotelian principle of parsimony<sup>142</sup>. He addresses more directly the issues at stake when he remarks that the species are not needed for knowledge of one own's self and God<sup>143</sup>, adding that species impressed by perceptual faculties would compromise the immateriality of the intellect and its actualization<sup>144</sup>. Henry concedes that a *species expressa* may be legitimate in intellectual knowledge, although it is to be understood as a "habitus"—some sort of mental disposition—or as an Augustinian "notitia"<sup>145</sup>.

Surprisingly, in *Quodlibetum* V, q. 14 Henry confirms that species are present *impressive* in the intellectual habit, and thus seems to grant indirectly the existence of impressed species as distinct from the associated habit. However, this observation is followed by the disambiguating identification of the species in this habit with the "quidditas" or the intelligible object<sup>146</sup>: (impressed) species in intellectual knowledge are acceptable only on condition that they are identical with the cognitive contents stored in the mind. In the same *Quodlibetum* V, q. 14, Henry explicitly rejects the 'traditional' intelligible species, replacing it with a phantasm endowed by the agent intellect with the capability of moving the possible intellect:

Intellectus autem possibilis speciem impressam nullam recipit à phantasmate, sed actione agentis facientis phantasmata, quantum est de se solum in potentia moventia intellectum esse actu moventia intellectum, & existentia in eo, ut in cognoscente solum, & hoc sub ratione universalis, quod idem re est, ut est in cognoscente, scilicet

<sup>142</sup> Cf. *Quodlibeta*, Venetiis 1613, IV, q. 7, 148va-b: Augustine never speaks of "species impressae", but posits knowledge of things on the basis of their essence.

<sup>143</sup> *Quodlibetum* IV, q. 7, 149rb-va.

<sup>144</sup> See also *Quodlibetum* IV, q. 21, 200ra-va; V, q. 14, 260ra.

<sup>145</sup> *Quodlibetum* IV, q. 21, 201va; *idem*, q. 7, 148vb-149ra: Augustine's "notitia" must be interpreted as "species expressa". On f. 150ra-51ra, Henry distinguishes between three meanings of "species" in Augustine; the third one is "notitia in cognoscente"; see also § 1. For the formation of an intellectual habit, see already William of Auvergne, *Tractatus de anima*, 214a, discussed in ch. II, § 1.5. The problem of the continuity of intellectual conceiving is already in Aristotle; see Wedin, *Mind and Imagination in Aristotle*, 129, for problematic aspects of the contemplation of isolated concepts in Aristotle. The topic of an intellectual habit as alternative to species remaining in the intellect after the cognitive act will return, e.g., in Ockham and in Renaissance disputes on (intellectual) memory.

<sup>146</sup> *Quodlibetum* V, q. 14, 261rb-va. For the assimilation between "species" and "habitus" elsewhere in Henry, see Tachau, *Vision and Certitude*, 32, note 16.

imaginativa sub ratione particularis, & in intellectu sub ratione universalis.<sup>147</sup>

Once again, Henry's criticisms chiefly concern the sensible origin of intelligible species<sup>148</sup>. His observations strongly suggest that he is thinking of a doctrine of the "species intelligibilis" developed along the lines of the perspectivist tradition<sup>149</sup>. His principal target may also include the species doctrine of the masters of arts discussed in the previous section, or the view of Giles of Rome. Independently of any more precise characterization of Henry's target, his criticisms clearly presuppose a garbled and distorted interpretation of Thomas' theory<sup>150</sup>, namely, the view of intelligible species as straightforwardly impressed (exclusively "accepta a rebus"). This is the basic tenet attacked by and obviously exposed to Henry's objections<sup>151</sup>.

Henry developed two types of objections: a 'piecemeal' criticism of specific aspects of the species doctrine, and a more global criticism based on an overall view of cognitive psychology that conflicts with psychological frameworks for the species. Henry is following the former type of strategy when he points out that the essence of a separate intelligible object is sufficient to inform and actualize the human intellect<sup>152</sup>. The upshot of this argument is that the species is redundant for knowledge of spiritual objects; it does

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<sup>147</sup> *Quodlibetum* V, q. 14, 262rb-va. Brown, "Intellect and knowing in Henry of Ghent", 693-96, seems to miss this point and continues his talk of intelligible species in Henry, without signalling the critique in these *quaestiones*. Already Tachau, *Vision and Certitude*, 29, note 7, remarked that caution was required in reading Brown's studies. One has to point out that Henry seems to exclude *ipso facto* in this passage an intellectual memory, which is reinstated in its position and defended by many later theologians.

<sup>148</sup> The illuminated phantasm as an alternative to the intelligible species is examined below.

<sup>149</sup> He clearly knew the perspectivist theory, as Tachau demonstrated, see *Vision and Certitude*, 31, note 12.

<sup>150</sup> According to Tachau, *Vision and Certitude*, 31, note 14, Henry's critique regards the elaborations by Parisian scholars of Roger Bacon's multiplication theory, and she indicates especially Albert and Thomas. Tachau remarks on the same page that Bacon was quite vague about intelligible species, without providing, however, any textual evidence. In fact, we have seen above that R. Bacon ignored the existence of any *species intelligibilis*. Albert and Thomas, however, did not theorize a species doctrine in terms of a multiplication theory, nor did they postulate any impressed intelligible species.

<sup>151</sup> See the Conclusion of this chapter.

<sup>152</sup> A survey of Henry's arguments against intelligible species is presented by F. Prezioso, *La "species"*, 14f.



refute the necessity of a formal mediation for knowledge of material reality, however<sup>153</sup>.

Henry's theoretical commitments in psychology play a more prominent role in his 'global' rejection of the species doctrine: (1) his main argument against abstracted species presupposes that the intellect cannot receive anything from the senses<sup>154</sup>; (2) he argues that any mediating species would become the object of knowledge, thus preventing a cognitive grasp of essences<sup>155</sup>; (3) the intelligible species as a singular entity could never mediate knowledge of a universal essence<sup>156</sup>; (4) postulating intelligible species forces one to accept the undesirable consequence that the intellectual act is a necessary physical phenomenon, independent of the will<sup>157</sup>; (5) a formal mediation leads to an infinite regress of cognitive representations<sup>158</sup>.

For a balanced assessment of Henry's arguments, it is important to keep in mind the subtle qualifications in Thomas' presentation of the species doctrine. Thomas, too, would have rejected any 'strong' influence of the senses upon the intellect (*ad* 1). The argument of the infinite regress in the species production, presented by Henry as a crucial objection (*ad* 5), shows that he understands the intelligible species as *quod* rather than as *quo intelligitur*. According to Thomas, however, the singularity of the species (*ad* 3) is a most significant feature, ensuring that intellectual thought can grasp concrete essences of material things<sup>159</sup>. Moreover, the intelligible species is primarily a representational device—proportionating the intelligible essence structurally present in sensible phantasms to the intellect—which may become cognitive object only through a re-

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<sup>153</sup> Notice that Henry is implicitly advocating here a theory of the intellectual act akin to the accounts of Arabic commentators and early 13th-century authors, who did not distinguish between species or intention and the effectively known intelligible form. Cf. ch. I, § 3; ch. II, § 1.

<sup>154</sup> *Quodlibetum* IV, q. 21, 200ra-201va; cf. *Quodlibetum* V, q. 14, 262rb. Henry does not hold any accidental forms in spiritual substances; cf. Z. Kuksewicz, "Criticism of Aristotelian psychology", 625-626.

<sup>155</sup> *Quodlibetum* IV, q. 7, 149ra-151vb.

<sup>156</sup> *Quodlibetum* V, q. 14, 259va.

<sup>157</sup> *Quodlibetum* V, q. 14, 259va. For a (partial) anticipation of some of Henry's arguments in Sextus' criticisms of Stoic cognitive psychology, see ch. I, § 1.4.3.

<sup>158</sup> *Quodlibetum* IV, q. 21, 200va; cf. *Idem*, q. 7, 149va.

<sup>159</sup> Cf. *Summa contra Gentiles*, II, c. 75, 1553; quoted in the preceding chapter, § 3.5.

flective process (*ad 2*). As we have seen from the works of Grosse-teste and Roger Bacon, the theory of the multiplication of the species concerns sensible species only. In accordance with this view, Thomas states that the causal chain linking the material world, the sensible species of the external senses, and the phantasms of the inner senses does not reach up to the intellect. On account of this fundamental difference between the two (sensible and intellectual) “ordines” (*ad 4*), Thomas maintains the necessity of a formal mediating principle abstracted from the phantasms by the agent intellect.

According to Henry, a consequence of Thomas’ theory of abstraction is an intolerable determination of the intellect by the senses. Henry evidently failed to recognize that this ‘influence’ must be understood within the broader context of Aquinas’ participation theory and the doctrine of the “lumen intellectus agentis”, rather than in terms of *impressed* species. As an alternative to the intelligible species, Henry addresses the problem of intellectual knowledge in terms of a new relation between agent intellect and phantasms.

Henry postulates that the only *ratio intelligendi* is the intellect’s bare essence<sup>160</sup>, and thus the problem of knowledge acquisition assumes a new form: “How can this bare essence grasp the sensible world?” A crucial precondition, in Henry’s view, is that phantasms must be capable of moving the possible intellect. And this, in turn, means that they must be transformed into universal entities, since their singularity prevents them from becoming intelligible<sup>161</sup>.

This condition is better specified in a passage describing the cognitive role of the agent intellect. The agent intellect does not generate intelligible species, but divests images of their particular features. Once purified, the universal phantasm is capable of actualizing the possible intellect:

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<sup>160</sup> *Quodlibetum* V, q. 14, 260va: “Primo modo diximus iam, quod intellectus quicunque etiam creatus seipso est ratio intelligendi quaecunque intelligit, idest, quod essentia sua nuda est ratio intelligendi quaecunque intelligit, qua procedit ab ipsa active actus intelligendi, ita quod plus non requiritur ex parte intellectivi, in quantum intellectivum est in actu intelligens.” Also in Olivi the “nuda essentia” is endowed with a similar function.

<sup>161</sup> *Quodlibetum* V, q. 14, 262rb. Thomas, instead, merely took their material character as an obstacle towards actual intelligibility.

Hic vero phantasmata particularia sunt existentia in phantasia, circa quae operatur lux agentis, separando ea a conditionibus particularibus, & sequestrando illas ab eis: quod est abstrahere ab eis species quae sunt phantasmata universalia. (...) Hic vero non est aliud re phantasma particulare, & species quae est phantasma universale: sicut nec res universalis est alia a re particularia: nec ipsa species quae est phantasma universale, abstrahitur a phantasmate particulari per modum separationis realis aut generationis aut multiplicationis in intellectum: ut quem informat ad eliciendum in intellectu actum intellectionis: sed solum per quamdam separationem virtualem conditionum materialium & particularium, & illarum sequestrationem ab ipso: (...).<sup>162</sup>

Even granting that the notion of a universal sensory representation can be coherently introduced, it is difficult to pinpoint the difference with the intelligible species<sup>163</sup>, also in view of the fact that Henry occasionally qualifies the universal phantasm as species. In this connection, Henry emphasizes that the species is a newly produced representation, whereas the universal phantasm is the sensory image divested of its material and particular aspects. This is a self-defeating move, however, which projects a *contradictio in terminis* on the universal phantasm: how can a sensible image ever become or appear as universal?

Henry's dislike of 'interferences' from the material world in the production of mental acts leads him to the very edge of a thorough cleavage between sense perception and intellectual knowledge. He attempts to escape this undesired consequence with the doctrine of the illuminated, universal phantasm. This incoherently characterized entity, however, can hardly be viewed as the sole origin of full-fledged intellectual knowledge. Indeed, Henry points out that the universal phantasm is only the triggering element of the cognitive process, for the intellect cannot attain truth without divine illumination<sup>164</sup>. Invoking divine illumination is the paradoxical, albeit quite

<sup>162</sup> *Summa quaestionum ordinarium theologiae*, a. 58, q. 2, 130r; cf. *Quodlibetum* XIII, q. 8, in *Opera omnia*, vol. XVIII, ed. J. Decorte, Leuven 1985, 51.

<sup>163</sup> Indeed, as appears from the quotation of *Summa Quaestionum*, a. 58, q. 2, also Henry uses the term "species" for the 'universal' phantasm. Cf. E. Bettoni, *Il processo astrattivo nella concezione di Enrico di Gand*, Milano 1954, 57-59. Tachau, *Vision and Certitude*, 36 maintains that sensible images and intelligible contents can be identified with Avicenna's first and second intentions, respectively.

<sup>164</sup> This issue has been widely discussed; cf. Kuksewicz, "Criticism of Aristotelian psychology", 626; E. Bettoni, *Il processo astrattivo nella concezione di Enrico di Gand*, 18-20; J.V. Brown, "Divine illumination in Henry of Ghent" in *Recherches de théologie ancienne et médiévale* 41(1974), 177-199.

natural, outcome of Henry's defence of the independence of the human mind<sup>165</sup>. Evidently, though viewed as the proximal cause, or at least as a triggering element of the intellect's first operation, "the simplex apprehensio", the universal phantasm is insufficient to provide an adequate foundation for (propositional) thought on universal contents<sup>166</sup>.

Henry of Ghent severs the relation, restored by 14th-century Franciscan authors<sup>167</sup>, between individual entities and the intelligibility of the world. Historically more incisive is his qualification of the intelligible species as *impressa*, which largely guides his arguments against the necessity of mediating mental representations in the production and effective grasp of cognitive contents. Henry's overall interpretation of the species merges doctrinal elements borrowed from Augustine and the perspectivistic tradition with Thomas' cognitive psychology. This straw man, as we shall see later, is the source of a historically influential misunderstanding of Thomistic views on mental representation.

Henry's peculiar understanding of the doctrine of intelligible species is the main source of his opposition. The identification of the intelligible species with a dematerialized "dummy" of sensible reality, mechanically impressed by sensory capabilities, conflicts with Aquinas' overall psychology of cognition. The latter is based upon a synergy of sense perception and intellectual capabilities, which play qualitatively different roles in knowledge formation. Some of Henry's objections correctly apply to impressed intelligible species, as they presuppose, or at least strongly suggest, a one-to-one correspondence between the features of sensory and intellectual (or mental) representations. It is quite likely, that Thomas, too, would have rejected this notion of species.

Henry's opposition to the fairly naturalized and strictly sense-dependent intelligible species leads him to formulate a rather sterile

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<sup>165</sup> The dependence of human knowledge on divine interventions will be one of the focal points of John Duns Scotus' criticisms of Henry; see J.V. Brown, "John Duns Scotus on Henry of Ghent's arguments for divine illumination: the statement of the case", in *Vivarium* 14(1976), 94-113.

<sup>166</sup> For discussion, see E. Bettoni, *Il processo astrattivo nella concezione di Enrico di Gand*, 21f; J.V. Brown, "Abstraction and the object of the human intellect according to Henry of Ghent", 88f.

<sup>167</sup> Quite differently from Thomas, with the doctrine of intuitive knowledge, already analyzed by many scholars; cf. S.J. Day, *Intuitive Cognition*, cit.

and problematic account of how cognitive contents refer to sensible reality. In fact, he fails to give a consistent explanation of how the illumination of an immaterial intellect may enable a physiologically embedded representational device—still characterizable as a phantasm—to move the possible intellect.

### 3.3. *Godfrey of Fontaines: virtual contact and the species as act*

Godfrey of Fontaines<sup>168</sup>, though defending several of Thomas' conceptions in his *Quodlibeta*, written between 1285 and 1297, disavows the view that the agent intellect can operate on phantasms. As a consequence, he rejects the necessity of intelligible species as mediating principles of intellectual knowledge with arguments similar to those formulated by Henry of Ghent<sup>169</sup>. As an alternative to the species doctrine, he suggests an account of the origins of human cognition rooted in his reflections on the potentiality of our intellect.

According to Godfrey, the species cannot be distinguished from the act of the intellect. The potentiality of the intellect is its capacity to apprehend, rather than the possibility to receive something from the senses. The term "species" must be interpreted as the *intelligere* itself<sup>170</sup>. This view anticipates the identification of mental act and cognitive representation suggested later by Peter Olivi and many others<sup>171</sup>. Godfrey pushes further the doctrinal orientation of Henry with a more detailed account of cognitive processes, and a sharper distinction between the intellect and the senses.

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<sup>168</sup> Godefrodus de Fontibus, ca. 1250—1306/1309; studied arts at Paris in the early 1270s; studied theology under Henry of Ghent and Gervais of Mt. Elias at the Sorbonne beginning at least as early as 1274; master in the theological faculty from 1285 to 1298-99 and again ca. 1303-1304. For his doctrinal position and his disagreements with a Thomist such as Thomas Sutton, see J. Hoffmans, "Le table des divergences et innovations doctrinales de Godfroid de Fontaines", in *Revue néoscholastique de philosophie* 36(1934), 412-436.

<sup>169</sup> Cf. *Quodlibetum* IX, ed. J. Hoffmans, Louvain 1928, q. 19, 273-4.

<sup>170</sup> *Quodlibetum* IX, q. 19, 275: "Et quia huiusmodi condiciones conveniunt formae et speciei, ipsum intelligere etiam potest dici species sive forma. Etsi intelligere non consistit in receptione alterius speciei a se ipso realiter differentis, consistit tamen in receptione speciei pro tanto quod ipsum intelligere est quaedam formalis perfectio et sic quaedam species intellectum perficiens et informans et rei intellectae assimilans." See also *Quodlibetum* X, ed. J. Hoffmans, Louvain 1931, q. 12, 361.

<sup>171</sup> See below, and ch. IV, § 2.2 and ch. VI, § 2-3, in vol. II (forthcoming). For the assimilation of species and act, see already § 2.2, above.

Godfrey rejects the thesis that the intellect is capable of 'doing anything' with or in the phantasms<sup>172</sup>. But how did he stumble onto the problem of whether the intellect introduces anything in the phantasms? Two motives suggest themselves. When introducing this problem, Godfrey mentions possible misconceptions of Averroes' characterization of the agent intellect as "facere universalitatem in rebus"<sup>173</sup>. A second likely source is the theory of the illuminated phantasm formulated by Henry. Clearly, Godfrey's philosophical milieu pulled towards a negative answer to this unusual question<sup>174</sup>. And indeed, Godfrey characterizes the operation of the agent intellect on phantasms in terms which avoid any 'concrete' contact between them.

Godfrey rejects any positive illumination of phantasms by the agent intellect. Indeed, rather than elaborating a sensory representation, the agent intellect operates on the phantasm by removing or separating its features—not *realiter* to be sure—so as to render its formal kernel capable of moving the possible intellect. To explain this point, Godfrey introduces a metaphor that will return in Radulphus Brito<sup>175</sup>. Consider milk as possessing both color and taste. Without the influence of light, milk cannot make itself manifest as white, but it can still manifest itself as sweet. When light is present, milk can be grasped as white without being perceived as sweet. In the same fashion, Godfrey argues, one may distinguish between the quiddity of a material thing as it is represented in a phantasm, and its designation by accidental dispositions<sup>176</sup>. The interaction between intellect and sensible images in the generation of mental contents is identified with a "contactus spiritualis" or "virtualis", by which the substantial quiddities contained in sensory representa-

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<sup>172</sup> *Quodlibetum* V, eds. M. de Wulf & J. Hoffmans, Louvain 1914, q. 10, 35-40; this *Quodlibetum* was written ca. 1288.

<sup>173</sup> Indeed, many Averroistic authors answer in the positive, starting from Jean de Goettingen (active at the turn of the century), whose work is examined in Z. Kuksewicz, *De Siger de Brabant à Jacques de Plaisance. La théorie de l'intellect chez les Averroïstes latins des XIIIe et XIVe siècles*, 132.

<sup>174</sup> *Quodlibetum* V, q. 10, 35-36. This issue will survive until the Spanish Scholastics.

<sup>175</sup> See below, subsection 5.

<sup>176</sup> *Quodlibet* V, q. 10, 37. For discussion, see J.F. Wippel, "The role of the phantasm in Godfrey of Fontaines' theory of intellection", in *L'homme et son univers au Moyen Age*, ed. Ch. Wenin, Louvain-la-Neuve 1986, 573-582, on p. 577.

tions manifest themselves<sup>177</sup>. And this “sequestratio” of the intelligible essence is the agent intellect’s “facere universalitatem in rebus”<sup>178</sup>. The “virtual contact” suffices for the agent intellect to produce an effect which may also be called intelligible species, provided one regards it as contained *virtualiter* in the intellect’s own light:

Et non dicitur quod se habeat ad phantasmata sicut ars, quia proprie loquendo actione intellectus agentis non fit aliqua dispositio formalis in ipsis phantasmatis quasi in materia sed solum fit dicta sequestratio vel arbitratio vel remotio prohibentium et huiusmodi, quo facto virtute ipsius intellectus agentis et in eius lumine fit informatio intellectus possibilis ab ipsa intellectione talis cognoscibilis sive a specie intelligibili quae aliquo modo in lumine intellectus agentis continetur virtualiter.<sup>179</sup>

“Facere intellecta actu” seems to be understood in terms of some kind of occasionalism. A somewhat mysterious ‘spiritual’ contact with the ultimate outcome of sensible experience enables the agent intellect to inform the possible intellect by means of an act identified with an intelligible species. The latter is already contained virtually in the agent intellect’s light. As far as its content is concerned, however, the act-species seems to depend on the effects of the phantasm’s purification.

Godfrey’s historical significance in the species controversy is mainly due to his systematic identification of whatever is received by the intellect with the cognitive act itself, as well as to his reflections on the relation between the active features of the human mind and sensory information. Godfrey’s efforts on the latter issue are more convincing than Henry’s attempts to resolve the thorny question of the status and function of illuminated phantasms. Godfrey coherently draws a sharp distinction between intellectual and perceptual capabilities. The keen concern for the independence of the human intellect from alleged intrusions of the senses reveals an

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<sup>177</sup> *Quodlibetum* V, q. 10, 38: “Hoc autem fit quodam contactu spirituali et virtuali luminis intellectus agentis, nam supponendum est quod haec est natura intellectus agentis quod sua applicatione ad objectum singulare vel phantasma quodammodo contingat illud sua virtute solum quantum ad id quod pertinet dicto modo ad eius quidditatem substantialem”. Cf. J.F. Wippel, “The role of the phantasm in Godfrey of Fontaines’ theory of intellection”, on pp. 576–78.

<sup>178</sup> *Quodlibetum* V, q. 10, 39.

<sup>179</sup> *Quodlibetum* V, 40. For intelligible species contained “virtualiter” in the agent intellect, see also Giles of Rome, whose views have been examined in § 2.3.

underlying innatistic tendency in Godfrey's thought. In this sense, there is a manifest affinity with the contemporary innatism of authors such as Viterbo, Bate and Freiberg<sup>180</sup>. Although the mind cannot effectively process phantasms, the impact of perceptual acts is necessary for triggering mental activity, because the "quidditates" present in phantasms are the objective reference of intellectual thought<sup>181</sup>. Tending towards an innatistic position, but evidently unwilling to endorse it completely, Godfrey grounds the objective reference of cognitive contents on the 'virtual' contact between mind and sensory representations. This virtual contact, however, remains a vague and enigmatic notion.

### 3.4. *Peter Olivi: "aspectus" and mnemonic species*

Godfrey modified and pushed further Henry of Ghent's epistemological conceptions by limiting the intentional drive towards the object. Peter Olivi<sup>182</sup>, by contrast, motivated by the same idea of establishing a neat distinction between intellect and sensible world, minimizes the role of sensible objects and emphasizes the active nature of perceptual and cognitive faculties<sup>183</sup>. Since the sensible object does not have a substantive function in bringing about mental acts, the departure from Aristotelian cognitive psychology is even more radical in Olivi than it was in Henry or Godfrey.

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<sup>180</sup> See § 4.5 and § 5; cf. also the views of some Renaissance Neoplatonics, discussed in ch. VI and VIII, in vol. II (forthcoming).

<sup>181</sup> See *Quodlibetum* V, q. 10, 38, quoted above.

<sup>182</sup> Petrus Iohannis Olivi, 1248 Béziers—1298 Narbonne; Franciscan philosopher and theologian; entered the order at the age of 12 and after preliminary studies was sent to Paris, where William de la Mare, John Peckam and Matthew Aquasparta were teaching; because of his zeal for the rigorous observance of the Franciscan rule, he won the esteem of the Spirituals as well as the envy of those who interpreted the Franciscan poverty less strictly; between 1282 and 1292 various attacks were leveled at him for heresy; he wrote his commentary on the *Sentences* between 1281 and 1283. For bio-bibliographical information, cf. C. Partee, "Peter John Olivi: historical and doctrinal study", in *Franciscan Studies* 20(1960), 215-260, and Tachau, *Vision and Certitude*, 39. For Olivi's use of Augustinian quotations, see § 1.

<sup>183</sup> As Tachau, *Vision and Certitude*, 40, pointed out, one of the underlying motives of Olivi's supporting the active nature of perceptual and cognitive powers is that if they were shown to be passive then by extension, the will could be demonstrated to be passive in operation. See Petrus Iohannis Olivi, *Quaestiones in secundum librum Sententiarum*, ed. B. Jansen, 3 vols, Quaracchi 1926, q. 58, in vol. II, 407 and q. 74, in vol. III, 124.



Olivi regards knowledge as an intentional relation with reality, or—more specifically—as grounded in an “actual attention” (*aspectus*)<sup>184</sup>, and accordingly attributes a merely ‘terminative’ causality to the object in the production of intellectual knowledge<sup>185</sup>. Cognition originates from a mental principle with a totally self-sustaining activity, that is, stemming from its “nuda essentia”<sup>186</sup>. Here, quite paradoxically, the human mind opens itself up to an object with no efficient causal role in the production of the mental act concerning that very object<sup>187</sup>. Olivi does not rule out that the object may play a role in knowledge acquisition; he emphasizes, however, that the intellect tends towards the object, whereas the object merely ‘terminates’ the cognitive act<sup>188</sup>. The characterization of the role of material objects in terms of “impression”, which occurs in many contemporary psychological accounts, may also account for Olivi’s ruling out of an effective interaction between soul and extra-mental reality in cognitive processes.

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<sup>184</sup> Olivi may have derived the notion of “aspectus” from Alhazen or Augustine (see, e.g., *De Genesi ad litteram*, XII, c. 23, 473); for discussion, see Tachau, *Vision and Certitude*, 41, and note 43. Also perception occurs by an “actual attention”; cf. *In II Sent.*, q. 58, vol. II, 490. For discussion of Olivi’s perception theory and his case against perspectivistic optics, see Tachau, *o.c.*, 40–49.

<sup>185</sup> *In II Sent.*, q. 72, vol. III, 10: “Secundo est praenotandum quod licet obiectum, pro quanto solum terminat aspectum virtutis cognitivae et suae actualis cognitionis, non habeat simpliciter et proprie rationem efficientis, quia formalis terminatio praedicti aspectus non est aliqua essentia realiter differens ab ipso aspectu et saltem non est influxa vel educta ab obiecto, in quantum est solum terminus ipsius aspectus et actus cognitivi.” Cf. *In II Sent.*, q. 58, in vol. II, 415–16. This doctrine has been examined by: K. Hedwig, *Sphaera lucis*, 186; Kuksewicz, “Criticism of Aristotelian psychology”, 626; K. Tachau, *Vision and Certitude*, 40f, and especially by W. Hoeres, “Der Begriff der Intentionalität bei Olivi”, in *Scholastik* 36(1961), 23–48. Notice that also Thomas did not attribute any effective causality to the sensible object, but only a “material” one: sensory phantasms were fundamental for the objective content of cognition.

<sup>186</sup> *In II Sent.*, q. 74, vol. III, 119; cf. Henry, *Quodlibetum* V, q. 14, 260va for the same view (quoted above).

<sup>187</sup> *In II Sent.*, q. 72, vol. III, p. 35: “Nam actus et aspectus cognitivus figuratur in obiecto et intentionaliter habet ipsum intra se imbibitur; propter quod actus cognitivus vocatur apprehensio et apprehensiva tentio obiecti.”

<sup>188</sup> See *In II Sent.*, q. 72, vol. III, 35–36, and q. 58, vol. II, 415, where Olivi employs a variation of the light metaphor to explain this ‘terminative’ causality. Sunlight takes the shape of triangularity or roundness when shining in a triangular or spherical vase. The vase itself does not effectively produce the shape of the light, but only ‘terminatively’, that is, without the “terminus” such a shape could not have been produced.

Olivi levels an attack against Peripatetic cognitive psychology touching on the doctrine of intelligible species, and involving several other issues, such as the distinction between agent and possible intellect. In question 58 of his commentary on the second book of the *Sentences*, he examines the roles of agent intellect and intelligible species in the generation of mental acts. Since the mind produces its acts on the basis of an intrinsically active nature, both the Peripatetic agent intellect and a sense-dependent species are superfluous. Let us examine first Olivi's analysis of Aristotelian noetics<sup>189</sup>.

Olivi points out that Augustine does not speak of an active mind, thereby suggesting the consistency of a cognitive psychology dispensing with any sharp distinction between active and receptive faculties of the human mind. Furthermore, Olivi argues that no such distinction is possible: any crisp relation between a possible and an agent intellect induces an undesirable hierarchy between them<sup>190</sup>. Before reaching this conclusion, Olivi states a number of philosophical objections against the possibility of interactions between agent intellect and phantasm.

In the production of intelligible species, the agent intellect is generally supposed to illuminate sensory images. When delivered to sensory representations, so Olivi observes, this light must either preserve or lose its spirituality. The latter case is to be excluded, because the illumination would be causally inert; only two problematic interpretations are possible of the former case. Either the illumination is ontologically detached from the subject it inheres in, or the agent intellect communicates its intellectual being to the receiving subject<sup>191</sup>. To ignore these difficulties, simply accepting the illumination of the phantasms as unproblematic, is of no avail, for

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<sup>189</sup> For a general discussion of Olivi's views on psychology and cognition, see E. Bettoni, *Le dottrine filosofiche di Pier di Giovanni Olivi*, Milano 1959, cap. X.

<sup>190</sup> *In II Sent.*, q. 58, vol. II, 458.

<sup>191</sup> *In II Sent.*, q. 58, 457-58: "Et tamen praeter haec sequeretur ex hoc quod existentia huius irradiationis non dependeret ab existentia subiecti in quo recipitur, cum illud non habeat existentiam simplicem, sed potius existentiam dependentem a partibus extensis et divisibilibus, et ita non a suo subiecto, sed potius aliunde habebit haec irradiatio existentiam simplicem. Sequeretur etiam quod daret suo subiecto esse simplex et intellectuale, cum omnis forma, etiam accidentalis, denominet suum subiectum et det sibi aliquod esse et tale quale competit suae essentiae formali."

various thorny problems invest the causal aspects of the interaction between active mind and sensory images. The phantasm cannot be the material cause of the intelligible species, because a material cause inheres in its effect. Nor can it be the efficient cause, because the latter is to be identified with the agent intellect, and a simple effect such as the intelligible species cannot be caused by two different causes. A similar argument undermines the possibility of a synergy between agent intellect and phantasm in terms of principal and instrumental cause. Finally, one may suppose that the agent intellect introduces a disposition in the phantasm so that it can cause the intelligible species. This hypothesis does not solve the issue, for it implicitly assumes that the agent intellect is capable of producing the species on its own<sup>192</sup>.

Olivi, after rejecting the thesis that intelligible species are brought about by an interaction between mind and sensory images, puts forward an impressive series of arguments purporting to eradicate the intelligible species from the generation of mental acts. In general, if intelligible species were the effective principle of intellectual cognition, cognitive capabilities should be assigned to them, rather than to the soul<sup>193</sup>. Any interaction between species and the cognitive faculty in the production of the cognitive act must be excluded, since the latter, like the intelligible species, is a simple effect. Firstly, a plain sharing of causal responsibilities for mental acts is impossible<sup>194</sup>. Secondly, the hypothesis that the species confers a disposition upon the cognitive faculty entails a contradiction: the species may specify the mental act, but it is never capable of producing it<sup>195</sup>. Thirdly, one could maintain that intelligible species represent the object to the intellect. This does not entail, however, that they produce mental acts. Moreover, this hypothesis presupposes that the species mediate between mind and object and thus, according to Olivi, the mind's "aspectus" is terminated by the species. But then either the proper object of the mind becomes unattainable or objects can be known both through species and

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<sup>192</sup> *In II Sent.*, q. 58, 459-60.

<sup>193</sup> *In II Sent.*, q. 58, 465-66.

<sup>194</sup> *In II Sent.*, q. 58, 466-67.

<sup>195</sup> *In II Sent.*, q. 58, 467-68.

through themselves<sup>196</sup>. However, Olivi holds that representation through species interposes a veil between mind and object<sup>197</sup>. Finally, if the species is an instrument in the production of mental acts, then the cognitive faculty would have a function different from the generation of knowledge<sup>198</sup>. This last claim derives from Olivi's basic assumption that the cognitive faculty either has an exclusive role in the generation of knowledge or none at all.

So far, we have reviewed Olivi's arguments to the effect that the generation of intelligible species is impossible and that intelligible species cannot have (epistemo-)logically sensible functions in generating mental acts. He also gives more direct arguments purporting to show the impossibility of a mediating species as such. His epistemological view rules out ways of acquiring knowledge that are extrinsic to the human mind; therefore also the intelligible species, which originates in the sensible realm, must be rejected<sup>199</sup>. The alternative view that the mind produces (mediating) species<sup>200</sup>, advanced by Matthew of Aquasparta and Roger Marston, is based on the correct hypothesis that the mind is capable of producing mental acts on its own<sup>201</sup>, but entails that the soul is somehow excited by phantasms. In contrast to this, Olivi maintains that the soul is exclusively stimulated by the (spiritual act of) phantasy in conformity with the doctrine of "colligantia"<sup>202</sup>. Any excitation by phantasms boils down to a sort of impression, and Olivi rules out any impression by sensory devices. And even granting this possibility, he argues, one would have to accept the undesirable consequence that the soul focuses on these impressions rather than on the objects themselves.

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<sup>196</sup> *In II Sent.*, q. 58, 468-69: I will discuss below the role of species in recalling.

<sup>197</sup> *In II Sent.*, q. 58, 469: "Praeterea, nulla species ita repraesentat obiectum sicut ipsummet obiectum repraesentat se ipsum; ergo quando aspectus potentiae praesentialissime figetur in ipso obiecto, non oportebit quod per aliud sibi repraesentetur quam per semetipsum, immo si aliquid aliud interponeretur inter aspectum potentiae et ipsum obiectum, illud potius velaret rem et impediret eam praesentialiter aspici in se ipsa quam ad hoc adiuveret."

<sup>198</sup> *In II Sent.*, q. 58, 470.

<sup>199</sup> *In II Sent.*, q. 72, 18-26.

<sup>200</sup> For their positions, see the next section.

<sup>201</sup> *In II Sent.*, q. 58, 473; for discussion, see E. Bettoni, *Le dottrine filosofiche*, 479-80.

<sup>202</sup> See below.

Intellectual knowledge, Olivi claims, is generated exclusively by the mind<sup>203</sup>. But then how can knowledge of extra-mental objects arise at all? Though Olivi does not allow for mediating species, his arguments reflect the need for bridging the gap between the intellect and its sensible objects. Rather cryptically, he remarks that the cognitive act induces itself to absorb the object, thus becoming a “similitudo et sigillaris expressio”:

sic, quia vis cognitiva generat actum cognitivum cum quadam informativa imbibitione actus ad obiectum et cum quadam sigillari et viscerali tentione obiecti, idcirco eo ipso quod sic gignitur, fit ipsa similitudo et sigillaris expressio obiecti.<sup>204</sup>

Cognition, according to Olivi, presupposes a relationship, called “aspectus”, between the cognitive faculty and an object. This link is established by conversion caused either by the will or by a stirring of the senses<sup>205</sup>. The cognitive act concerning a sensible object naturally follows the conversion of the intellect to the object. In the same context, Olivi develops two epistemological conceptions—namely, the “colligantia” between body and soul, and the soul as a self-moulding wax table—which reappears in different forms in the works of Suarez and Cusanus, respectively<sup>206</sup>.

Olivi provides another argument for the impossibility of a “species intelligibilis” conceived as a mediating principle between a terminating object and the human soul projecting itself into the sensible world: one could not decide which *esse* is to be attributed to such species<sup>207</sup>. This is an ancillary point when compared to Olivi’s main claim that any entity mediating the intellect with the object hinders a genuine ‘contact’ between the two<sup>208</sup>. This shows that

<sup>203</sup> *In II Sent.*, q. 72, 22-23.

<sup>204</sup> *In II Sent.*, q. 72, 36. Cf. Hoeres, “Der Begriff der Intentionalität bei Olivi”, 30f and Müller, *Die Lehre vom verbum mentis in der spanischen Scholastik*, 66-67.

<sup>205</sup> *In II Sent.*, q. 50, in vol. II, 52f; q. 73, vol. III, 66.

<sup>206</sup> *In II Sent.*, q. 72, 30-31, and q. 58, vol. II, 416. The idea of a *colligantia* between body and soul was already anticipated by Jean de la Rochelle, *Summa de anima*, 194; cf. J. Rohmer, “La théorie de l’abstraction”, 125. For Cusanus and Suarez, see ch. VI, § 1.1, and ch. X, § 1.6, in vol. II (forthcoming).

<sup>207</sup> See *In II Sent.*, q. 73, vol. III, 87-88; cf. Tachau, *Vision and Certitude*, 43-46. See also q. 58, 457 and q. 72, 13 and q. 76, 145. As I noticed before, the ontological status of the intelligible species is hard to determine, for reasons inherent to its strictly functional role.

<sup>208</sup> *In II Sent.*, q. 72, 26; q. 74, 123, and q. 58, 468-69. See also Hoeres, “Der Begriff der Intentionalität bei Olivi”, 34.

Olivi misconceives the most fundamental feature of Thomas' revolution in cognitive psychology: the objective reference of mental acts is based on primarily unknown, functional principles, no implicit awareness of which is even required.

According to Olivi, the species, if acceptable at all, should be defined as *exprimens*, that is, as the result of the mind's "attentio", rather than as "terminans" or "impressa"<sup>209</sup>. In other words, the mental act is by itself representative of objects, and may be characterized as "species"<sup>210</sup>. Thus, species as purported *impressae* must be rejected. However, an *exprimens* intelligible species seems suitable to characterize the effect of the mental act, namely the recorded cognitive content<sup>211</sup>. Indeed, Olivi allows for mnemonic ("memoralis") species, ensuring the objective reference of intellectual acts of recalling, and whose existence is supported by sensory species<sup>212</sup>. He even assigns a functional role to such species: one recalls absent objects in virtue of species stored in memory.

Ex hoc patet quod ad hoc, quod per talem speciem cogitet obiectum absens, oportet quod in eam intendat, prout est repraesentativa obiecti absentis potius quam prout est in se quaedam essentia multum differens ab obiecto absente.<sup>213</sup>

Here, quite significantly, the mnemonic species is described as a mediating *object* ("in eam intendat")<sup>214</sup>, representing primarily an antecedent cognitive act<sup>215</sup>, rather than a mere mediating *represen-*

<sup>209</sup> See *In II Sent.*, q. 72, 24, and q. 74, 121.

<sup>210</sup> *In II Sent.*, q. 58, 463 and 470f.

<sup>211</sup> *In II Sent.*, q. 74, 112, 116: "(...) quia omnis species memorialis generatur per aliquam actualem cognitionem obiecti, (...) et consimiliter per actum intelligendi generatur species memorialis in materiali utero ipsius intellectus"; see also pp. 121, and 123. In q. 58, 470-73, the mental acts are described as true species and similitudes. See Tachau, *Vision and Certitude*, 52-53 for the disciplinary process against Olivi induced by his alleged elimination of species.

<sup>212</sup> See *In II Sent.*, q. 74, 116-117. See also the work of Jandun for a similar position; cf. ch. IV, § 4.2.

<sup>213</sup> *In II Sent.*, q. 74, 115-116. Notice that Olivi, unlike Henry of Ghent, does not identify mnemonic species with intellectual habits; see q. 74, 114, and 118-19. For a conception of the intelligible species as primarily mnemonic, see also the work of Gregory of Rimini, examined in ch. IV, § 3.4. Already in Albert the Great, the term "species" indicated the result of mental operations; cf. ch. II, § 2.1. See also Jean de Paris, *Commentaire sur les Sentences*, l.c., p. 299-300, ll. 245-250, quoted in § 1.4.

<sup>214</sup> See *In II Sent.*, q. 74, 119: "Species vero memoriales serviunt tantum de obiecto terminante actum et aspectum potentiae et repraesentante eis obiectum absens (...)."

<sup>215</sup> See also *In II Sent.*, q. 74, 116: "(...) quod primo representant huiusmodi actus ac deinde quod per ipsos eorum obiecta, (...)."

*tation*. Most likely, as Tachau points out<sup>216</sup>, Olivi did not see a conflict between his emphasis on mental species representing extra-mental objects and his critique of the species as preventing direct perception and cognition. Presumably, he held that the “*aspectus*” was sufficient for an immediate contact between object and soul, prior to the generation of mnemonic species. According to Tachau, Olivi is the first author to detect serious weaknesses of a representational theory of perception<sup>217</sup>. I disagree with this claim, since his view of mnemonic species as mediating objects is vulnerable to objections one could level against a sense data theory<sup>218</sup>.

Olivi’s hostility towards mediating principles in intellectual cognition is inspired by the basic, typically Augustinian, conviction that knowledge is exclusively grounded upon (active) cognitive capabilities and the object to be known. Therefore, no unconscious mechanism can play a role in generating mental acts. This assumption of a ‘self-sufficient’ mind, however, winds up with a circular explanation of knowledge acquisition, based on unacquired mental capabilities, in addition to known species when absent objects are involved.

Olivi does not consider the notion of (intelligible) species as utterly meaningless<sup>219</sup>, though he excludes that bodily reality can affect the soul. Once again, the concept of intelligible species is interpreted in the context of the perspectivist multiplication theory of species. Obviously, Olivi believes that the multiplication of species implies the existence of sensory entities penetrating the intellectual realm. According to the broader epistemological views of the early proponents of this doctrine, such as Roger Bacon and Robert Grosseteste, the existence of these intelligible species is unlikely; indeed, their doctrinal background was dominated chiefly by in-

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<sup>216</sup> *Vision and Certitude*, 51.

<sup>217</sup> *Vision and Certitude*, 44.

<sup>218</sup> See the Introduction for a general comparison between species and sense data theories.

<sup>219</sup> As Tachau emphasized, in *Vision and Certitude*, 51, note 77, against E.P. Mahoney, “Sense, intellect, and imagination in Albert, Thomas, and Siger”, in *Cambridge History of Later Medieval Philosophy*, 609. Also Hoeres, “Der Begriff der Intentionalität bei Olivi”, 31, holds that the *species intelligibilis* is superfluous in Olivi’s view.

natism and by Augustinian views of divine illumination<sup>220</sup>. Olivi's 'misapprehension' of the abstraction of intelligible species stands out in his objections against Aristotle and his followers<sup>221</sup>.

Olivi puts forward an account of intellectual knowledge as an active, and probably also *conscious* assimilation<sup>222</sup>. The cognitive act or "aspectus" presupposes that the mind, stirred by the will or the senses, can project itself onto the sensible realm. The impact of sensory stimuli occasions mental activity, whereas the cognitive assimilation of the object is a purely intra-mental process. The intellect is a largely self-sustaining source of knowledge, and the terminating causality of the sensible object expresses the marginal role of sensory information in generating mental contents concerning the sensible world.

Also Olivi's rejection of a functional mediation between intellect and sensible images seems to depend on a peculiar species theory, exclusively understood in terms of sensory entities impinging on the mind, and consequently open to many justified objections. But Thomas—as I emphasized already—did not endorse such a theory. His doctrine of intelligible species is misinterpreted in terms of the popular multiplication theory of species, which is frequently endorsed in circles of contemporary scientific and philosophical authors. This hybrid construct is criticized on the ground that it allegedly excludes any immediate contact between the mind and its cognitive object. However, most opponents of Thomas' doctrine do not develop coherent and philosophically more appealing alternatives. Olivi, for instance, does not provide a reasonable justification for the objective reference of mental content. Since he rejects the presence of innate contents as a rationale for his peculiar view on

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<sup>220</sup> See ch. II, § 1.4, and § 2.2. Moreover, Roger Bacon warned against literal uses of the impression metaphor, in *De multiplicatione specierum*, 46.

<sup>221</sup> *In II Sent.*, q. 72, 13: "Prima est Aristotelis et sequacium eius dicentium quod in spiritum corpori formaliter coniunctum agunt corpora et corporalia obiecta non solum per modum colligantiae nec solum per modum termini obiectivi, immo etiam per simplicem et impressivum influxum." Cf. pp. 19 and 27-28: the material character of the species cannot be reduced or eliminated.

<sup>222</sup> Cf. Hoeres, "Der Begriff der Intentionalität bei Olivi", 41. A similar position, but more coherently argued for on the basis of the dynamic descent of the mind in the sense organs, will be formulated by Cusanus; cf. ch. VI, § 1.1.



the intra-mental production of intellective cognition<sup>223</sup>, he is caught up in a 'stalemate' position between a static object and a dynamic mind whose intentional outward projection appears insufficiently argued for to guarantee an effective cognitive grasp of the sensible world.

### 3.5. *Radulphus Brito*

The *De anima* commentary of Radulphus Brito<sup>224</sup> shows that the intelligible species had become a codified issue, which was analyzed with a distinctive technical terminology. Brito amalgamates elements derived apparently from Godfrey's and Olivi's thought, though it is not conclusively known that he knew the work of the latter<sup>225</sup>.

Without evident reservations or qualifications, Brito initially states that the intelligible species is a necessary formal principle for representing cognitive objects<sup>226</sup>. Thereupon, in "quaestio" 16, he examines three different theories concerning what the agent intellect does with the phantasms. These are described as the "aliquid imprimendo", the "removendo prohibens", and the (already familiar) virtual contact theories<sup>227</sup>.

The first of these theories, probably originating with early Averroistic speculation<sup>228</sup>, is rejected on the following grounds: (a) the sensory image would receive a disposition from the agent intellect, albeit in the appropriate particularized fashion; and this particularization *ipso facto* prevents the phantasm from moving the

<sup>223</sup> Cf. *In II Sent.*, vol. III, appendix, "Quaestiones de Deo cognoscendo", 511, where Olivi rejects a Platonic innatism according to which the science of all things is in our intellects by nature from the very beginning.

<sup>224</sup> Radulphus Brito, fl. between the end of the 13th and the beginning of the 14th century; until 1307 he was master of arts at the university, Paris; lectured on the *Sentences*, from ca. 1308; then master of theology; from 1316 engaged in various ecclesiastical duties; wrote various commentaries on Aristotle's logical works. For bio-bibliographical information, see W. Fauser, *Der Kommentar des Radulphus Brito zur Buch III De anima*, Münster 1973, 3f; J. Pinborg, "Radulphus Brito's sophism on second intentions", in *Vivarium* 13(1975), 119-152, on p. 119f.

<sup>225</sup> For this reason, his position is analyzed here rather than in the next chapter.

<sup>226</sup> *Quaestiones in Aristotelis librum tertium De anima*, 173-176.

<sup>227</sup> In *Quaestiones in Aristotelis librum tertium De anima*, respectively, on pp. 226-9, 229-30, and 236f.

<sup>228</sup> Cf. the position of Jean de Goettingen, discussed in Z. Kuksewicz, *De Siger de Brabant à Jacques de Plaisance*, 132.

possible intellect; (b) the agent intellect does not move with local motion; (c) inferior capabilities cannot transcend their status to the extent of receiving something from superior ones; (d) every agent has its own "passum"; the possible intellect plays this role with respect to the agent intellect<sup>229</sup>.

Brito accepts the third theory, inspired by Godfrey of Fontaines; the second one is rejected only insofar as it assumes a real change in the phantasy. More specifically, Radulphus raises the following objections against the second theory: (i) the species, once abstracted, would change subject; (ii) the agent intellect cannot remove anything from the phantasy, because experience shows that sensorial images persist also after actual intellection; (iii) the agent intellect would become an "agens per accidens"<sup>230</sup>. Now, Radulphus claims that the third theory may be modified, avoiding these difficulties, into a new version of the second alternative<sup>231</sup>. The metaphors used as arguments for this solution are rather peculiar: (1) perceiving the whiteness of the milk independently of its sweetness, although both are 'in' the milk, is made possible by the sunlight<sup>232</sup>; (2) "Quia nos videmus quod calor naturalis in homine et in quolibet alio animato agit in virtute animae digestionem et alia opera vitae. Et tamen anima nullam dispositionem vel formam imprimit calori"; (3) the carpenter uses his saw without 'imprinting' a form upon it; (4) the way in which a celestial intelligence moves its sphere; (5) the imprint of a ring in wax. Brito does not accept the implications of these metaphors unconditionally. The first metaphor is qualified as "magis conveniens", whereas the third and fourth metaphors are deemed "non ex toto simile". The fifth entails that the agent intellect would chiefly operate on the possible intellect, thus minimizing the need for mental processing of sensory images<sup>233</sup>. Moreover, according to Brito, the possible intellect is

<sup>229</sup> *Quaestiones in De anima*, 228-29. Brito returns to the impression-doctrine on pp. 231-32.

<sup>230</sup> *Quaestiones in De anima*, 229-30.

<sup>231</sup> Cf. *Quaestiones in De anima*, 239, ll. 393-96: "Et est via bene probabilis et potest reduci ad viam secundam, quia ibi fit quidam contactus virtualis luminis intellectus agentis ad phantasmata, ex quo fit remotio conditionum individuantium quantum ad modum immutandi, ut visum est prius."

<sup>232</sup> This metaphor was used also by Godfrey for his 'virtual contact'; cf. above, subsection 3.

<sup>233</sup> *Quaestiones in De anima*, 236-239.

“summe dispositus” for the mental act, and does not need impulses from the active features of mind<sup>234</sup>.

Radulphus diverges from Godfrey’s solution<sup>235</sup>, despite a clear affinity between their views when he characterizes the operation of the agent intellect as a positive action:

Vel potest dici quod agit solum contangendo contactu virtuali super phantasmata sine impressione alicuius formae in phantasmatis. Sed ex solo contactu virtuali eius luminis ad phantasmata fit remotio conditionum individuantium quantum ad modum immutandi. Et sic non est solum removens prohibens, immo aliquem contactum positivum habet respectu phantasmatum. Hoc tamen non est, sicut dictum est in alia ratione, ut phantasmata aliqua forma secundum se perficiantur, sed ut in intellectu phantasmata generent determinatam cognitionem rei cuius sunt phantasmata.<sup>236</sup>

In a more detailed account of the agent intellect’s cognitive role, Brito no longer seems convinced of the necessity of intelligible species, thus leaning towards Henry’s position<sup>237</sup>. Indeed, in discussing the relation between agent intellect and sensory images, he remarks that there is no need to purify or imprint the latter by virtue of some disposition: to affect sensory images in such a way that they trigger the cognition of represented things will do<sup>238</sup>. Subsequently, he mentions rather ambiguously some sort of “speciem quidditatis” produced by the agent intellect<sup>239</sup> while, in a reply to the second difficulty against the “removendo prohibens” theory, he declares that intellectual knowledge is produced independently of any intelligible species<sup>240</sup>. It is not surprising, in view of these re-

<sup>234</sup> *Quaestiones in De anima*, 239.

<sup>235</sup> In Godfrey, however, there was no distinction between the second and the third alternative, because, “removendo prohibens” presumed the virtual contact between agent intellect and phantasm.

<sup>236</sup> *Quaestiones in De anima*, 240, ll. 426-434.

<sup>237</sup> *Quaestiones in De anima*, 240, ll. 417-21: “Ad hoc tamen cooperatur ordo virtutis intellectivae ad phantasiam, scilicet ut ex immutatione phantasiae in virtute intellectus agentis phantasma sive quidditas quae est in phantasmate sub ratione accidentis, immutet intellectum possibilem secundum se praeter accidentia.”

<sup>238</sup> *Quaestiones in De anima*, 240.

<sup>239</sup> Cf. *Quaestiones in De anima*, 242, ll. 474-479.

<sup>240</sup> *Quaestiones in De anima*, 243, ll. 495-501: “(...) quia per contactum virtutalem luminis intellectus agentis quidditas quae erat in phantasia sub ratione accidentium, potest secundum se facere sui similitudinem sive cognitionem in intellectu possibili, sicut praesente lumine color qui est in lacte, potest sui speciem vel cognitionem generare in oculo ita, quod similis species generetur sub esse intentionali in oculo ipsi coloris sub esse reali existenti in obiecto.”

marks, that Radulphus eventually comes to identify the species with the “cognitio rei” in his determination of question 25: he excludes that the species is a mediating representation between the “quidditas” and the intellectual act, and thus endorses a view similar to those of Godfrey and Olivi<sup>241</sup>. Accordingly, it is somewhat misleading to state, as the editor of the *quaestiones* did, that Radulphus was a follower of Thomas<sup>242</sup> and a champion of the abstraction theory<sup>243</sup>. It may very well be that Radulphus rejected (radical) neo-Augustinian positions, as Fauser suggests. However, if he is to be counted at all as a (wayward) disciple of other philosophers, one should not overlook the fact that his views are more sympathetic to those of Godfrey and Olivi rather than to the view of Thomas.

### 3.6. *Concluding remark*

Henry, Godfrey and Olivi all examine the issue of intelligible species when discussing the relation between agent intellect and phantasm, that is, between the active features of the human mind and sensory representational devices. Their attacks against intelligible species concern an eclectic construction merging Thomistic conceptions, elements of perspectivistic optics, naturalistic tendencies of late 13th-century Aristotelianism, and Augustine’s theory of perception. The specific functional role assigned by Thomas to the intelligible species as mental representation is no longer preserved in this eclectic doctrine. If one rejects the species as mental representation, a viable alternative seems to be that of envisaging a direct production of cognitive contents on the basis of sensory representational devices, along the lines of, for example, Aristotle’s *De anima*. The dominant (neo-) Augustinian tendencies in psychology ruled out any such solution by postulating a radical ontological hiatus between intellect and phantasm. Similarly, doctrines of innate contents were generally regarded as unacceptable alternatives. Thus, rejecting the intelligible species involves a serious impasse in post-Thomistic medieval cognitive psychology.

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<sup>241</sup> *Quaestiones in De anima*, 292-97. He also excludes allegedly “concreatae” species, however.

<sup>242</sup> *Quaestiones in De anima*, 5 and 58.

<sup>243</sup> *Quaestiones in De anima*, 52-53.

## § 4. MODERATE REACTIONS

With their criticisms of intelligible species Henry of Ghent, Godfrey of Fontaines, and Peter Olivi present rather original positions and innovative ideas in the field of cognitive psychology. Their views will be constant points of reference in medieval and Renaissance disputes up to and including the Second Scholasticism. Their scholarly activity has an immediate impact on the work of a group of friars and other congenial authors, who revise their doctrines towards more moderate, conciliatory solutions. Most of these figures do not introduce noteworthy novelties, threading on the unsteady middle ground between Augustinian and Aristotelian psychologies. None of them will be as influential as Henry of Ghent, Godfrey of Fontaines, and Peter Olivi. As a rule, they attribute to Aristotle and Thomas the thesis that all intellectual knowledge stems from the senses<sup>244</sup>. This broad thesis is rejected, while the intelligible species is preserved as a formal principle of intellectual knowledge. Given these commitments, the origin of intellectual knowledge and contents can be explained only on the basis of somewhat artificial, and sometimes even contradictory theories.

4.1. *Matthew of Aquasparta*

Matthew of Aquasparta<sup>245</sup> defends the necessity of sensible and intelligible species chiefly on the basis of Augustinian quotations<sup>246</sup>, rejecting the view, attributed to Aristotle and Thomas, that all intellectual cognition builds up “ab inferiori”<sup>247</sup>. Matthew espouses a

<sup>244</sup> The position of Agostino Trionfi is exceptional, as we shall see: it must be understood in the context of Giles of Rome's dominating position in the order of Augustinian Hermits.

<sup>245</sup> Mattheus ab Aquasparta, ca. 1237—1302; teaches at Bologna between 1277-9; writes his *Quaestiones de cognitione* before 1280. For discussion, see J. Rohmer, “La théorie de l'abstraction”, 161-78; Prezioso, “L'attività del soggetto pensante nella gnoseologia di Matteo d'Acquasparta e di Ruggiero Marston”, in *Antonianum* 25(1950), 259-326, on pp. 259-289; H. Beha, “Matthew of Aquasparta's theory of cognition”, in *Franciscan Studies* 20(1960), 161-204 and 21(1961), 1-79, 383-465.

<sup>246</sup> Matthaeus ab Aquasparta, *Quaestiones de cognitione*, in *Quaestiones de fide et de cognitione*, Quaracchi 1957, q. III, 261f and 287; see also q. V, 306-308. Cf. H. Beha, “Matthew of Aquasparta's theory of cognition”, in *Franciscan Studies* 21(1961), on p. 384.

<sup>247</sup> *Quaestio de cognitione* II, 231: “Alia positio fuit Aristotelis, ut videtur, qui totam rationem cognoscendi dixit causari et venire ab inferiori, via sensus, memoriae et

radical separation between the mind on the one hand and the material world and sense perception on the other hand. Since the human mind or soul cannot 'receive' anything from the body, straining manoeuvres are needed for explaining how empirical cognitive contents can arise at all.

According to Matthew, a cognitive process is occasioned by an external object impinging upon a sense organ through the production of a species. Reacting to this external stimulus, the soul assimilates itself to this affection of sense organs:

Quando ergo fit aliqua immutatio in organo sensus, puta in organo virtutis visivae, per aliquam speciem alicuius visibilis, anima, quae secundum illam virtutem est perfectio et motrix organi illius, commonita, excitata et pulsata ex organi immutatione, configurat se et assimilatur sive coaptatur illi motui proportionaliter et immutatur consimili immutatione.<sup>248</sup>

Thus, it is the organ rather than the soul which receives a species. And yet, though originating in the corporeal world, the species depends upon the soul inasmuch as it is *sensible, imaginable* and *intelligible*<sup>249</sup>.

Augustine's influence is clearly visible in the claim that the soul cannot 'undergo' or 'suffer' the materiality of the external world. At the same time, however, Matthew is committed to the different degrees of Peripatetic abstraction, and therefore regards the process of active assimilation as continuing up to the level of the human mind:

Quando autem fit immutatio in ultimo organo sensitivo [scil. that of the internal sense] per aliquam speciem, tunc transformat se et configurat illi motui vel in illam speciem secundum intellectum. Et hoc modo videntur sibi salvare illos gradus abstractionis quos ponit Philosophus. Non quod aliquid extrinsecum ingrediatur in essentiam animae, hoc enim nefas est dicere, sed proportionaliter transformat et assimilatur sive configurat et coaptatur se secundum gradus organorum, propter naturalem colligantiam et connexionem potentiarum cum organis.<sup>250</sup>

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experientiae, cum lumine naturali nostri intellectus agentis abstrahentis species a phantasmatibus et facientis eas intellectas in actu."

<sup>248</sup> *Quaestio de cognitione* III, 260. See also p. 262-63. As a matter of fact, Matthew, following Augustine, divides the senses into 'organ' and 'sensible soul'.

<sup>249</sup> *Quaestio* III, 264.

<sup>250</sup> *Quaestio* III, 260.

Finally, as in Albert and Thomas, the intellect endows the sensible species of the internal senses with 'intelligible being'<sup>251</sup>. This mental operation is grounded in the natural relation between cognitive faculties and sense organs, just like in Olivi's "colligantia" doctrine. Since intelligible species cannot be received from the senses<sup>252</sup>, the agent intellect is their exclusive "manufacturer". These basic options jeopardize the objective reference of intellectual forms of knowledge. Aquasparta is aware of this problem, and suggests a solution which attempts to reconcile Aristotle and Augustine:

Sic igitur dico sine praeiudicio, quod anima sive intellectus accipit sive capit species a rebus extra, non virtute rerum corporalium agentium in animam vel intellectum, sed intellectus sua virtute facit et format. Huic sententiae Augustinus concordat in auctoritatibus adductis in opponendo; concordat nihilominus Philosophus.<sup>253</sup>

Elsewhere, however, he warns us that the *entia* cannot be known in their general structure without divine illumination<sup>254</sup>. Thus, the intelligible species is insufficient to ensure an intellectual grasp of truth<sup>255</sup>. Matthew holds that the intellect cannot be informed by phantasms, but quite paradoxically assumes that the species produced by the intellect somehow originate in these sensory representations<sup>256</sup>. This 'flawed' origin prevents the species from engendering full-fledged intellectual knowledge, and allows it to participate only in ambiguously specified, "incomplete" intellectual acts<sup>257</sup>.

<sup>251</sup> *Quaestio* III, 264; cf. Prezioso, "L'attività del soggetto pensante", 275-78.

<sup>252</sup> *Quaestio* III, 264-67.

<sup>253</sup> *Quaestio* III, 267; cf. also p. 264: "Unde non tam recipit a rebus, quam accipit vel rapit vel format, non de se, ut dictum est, sed ex illis et de illis".

<sup>254</sup> *Quaestio* II, 232-36.

<sup>255</sup> See *Quaestio* III, 270. Cf. also the position of Henry of Ghent; on their relationship, see S. Marrone, "Matthew of Aquasparta, Henry of Ghent and Augustinian epistemology after Bonaventure", in *Franziskanische Studien* 65(1983), 252-90.

<sup>256</sup> *Quaestio* III, 272: "(...) quoniam intellectus non informatur phantasmate, nec phantasma transmutatur in aliquam speciem quae informet intellectum; sed ex phantasmate gignitur species illa quae intellectum informat; nec spirituale gignitur ex corporali proprie, quia non virtute sua, sed virtute agentis."

<sup>257</sup> *Quaestio* III, 270: "Propter quod intelligendum quod ad notitiam veritatis concurrunt tria, scilicet species accepta a sensibus quasi materiale; et lumen naturale intellectus agentis quasi efficiens secundarium; et species facta actu intellecta per actum eius quasi formale, sed incompletum; tertium est lumen divinum irradians quasi efficiens primum et principale, et lumen ab eo fluxum, formale completivum et con-

It would not be entirely fair to conclude from these opposing tendencies that Aquasparta is unable to consistently solve the problem of the relation between active and passive aspects of human knowledge<sup>258</sup>. However, his unwillingness to allow for a “passio” of the intellect prevents him from providing a balanced account of the relationship between active features of the human mind and sensory representations. This problem is particularly acute in view of the fact that Matthew does not exclude that the species originate in phantasms.

Matthew's thought is characterized by a hybrid convergence of Augustinian psychology and Peripatetic abstraction, the principal outcome of which is a ‘purified’ species-doctrine. The “a rebus accepta” is maintained, but unusually grounded in an unexplained ‘natural’ connection between sense organs and cognitive faculties. Excluding passivity in the intellect, Matthew *de facto* rules out that the latter develops its cognitive contents on the basis of sensory representations.

Matthew's works vividly express the tension between, on the one hand, sense-dependent Aristotelian cognitive psychology and, on the other hand, Augustinian views on the soul's activism and autonomous knowledge acquisition<sup>259</sup>. For this very reason, his position is emblematic of many Franciscan authors active during the period between Thomas and Duns Scotus. They are whole-hearted Augustinians, who regard the received doctrine of the intelligible species as plainly heterodox, and refrain from postulating innate contents. Accordingly, they are bound to explain knowledge acquisition by postulating a mind capable of assimilating itself to the affections of sense organs.

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summativum, ut in quaestione praecedenti visum est.” Cf. pp. 214-15: the created truth is only an *expressio* of the uncreated truth.

<sup>258</sup> As Prezioso argued in “L'attività del soggetto pensante”, 309-10. I think that the very title of this study reveals a somewhat peculiar approach to Matthew's eclecticism; the expression ‘thinking subject’ is laden with undesirable connotations from later philosophical traditions

<sup>259</sup> This is the fundamental difference between the early Franciscan assimilation of Aristotle (cf. ch. II, § 1) and that of later 13th-century authors.



#### 4.2. *Richard of Middletown*

Richard of Middletown<sup>260</sup> is a good example of Thomas' influence on later 13th-century psychological debates, illustrating at the same time the doctrinal basis in which the seeds of doubt sprinkled by Henry of Ghent and Peter Olivi were received<sup>261</sup>. The theory of intelligible species seems to fit Richard's doctrinal framework, since he rejects innate ideas and (divine) illumination. And indeed, he formulates only local perplexities about the theory, without attempting to systematically undermine the theory as such<sup>262</sup>. Less affected by Henry's critical examination of the species than, for example, Matthew, he seems nonetheless incapable of taking a definite stand on this issue<sup>263</sup>. Two problems addressed by Richard are significant in this context: (i) the generation of mental acts and the origin of intelligible species; (ii) how the mind can develop knowledge of substantial essences on the basis of species that are ontologically characterized as accidents. The latter is a substantive philosophical issue, and plays also a prominent role in the historical development of the debate.

In his comment to the second book of the *Sentences*, Richard expounds a theory of the intellectual act without species:

(...) de potentia phantasmatis, de cuius essentia non est materia, educitur per actionem intellectus agentis quaedam refulgentia, qua

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<sup>260</sup> Ricardus de Mediavilla, ca. 1249—1307/8; studied theology and philosophy in England; by 1283 he is in Paris, where he becomes master in theology before 1285 and teaches at the university; writes his commentary on the *Sentences* between 1285 and 1295; for more biographical information, see E. Hocedez, *Richard de Middleton. Sa vie, ses oeuvres, sa doctrine*, Louvain-Paris 1925. I used the following edition of his comment on the *Sentences*: Ricardus de Mediavilla, *Super quatuor libros Sententiarum*, Brixiae 1591.

<sup>261</sup> It is uncertain whether Richard was influenced by Olivi, but his determination of the intelligible species as mnemonic content is strikingly similar to Olivi's treatment of the same issue. Olivi completed his commentary on the *Sentences* between 1281-83, that is, before Richard's arrival in Paris.

<sup>262</sup> Cf. Bowman, "The development", 272. The influence of Thomas and Vital du Four is discussed by P. Palmaz Rucker, *Der Ursprung unseren Begriffe nach Richard von Mediavilla. Ein Beitrag zur Erkenntnislehre des Doctor solidus*, Münster 1934, 154-55.

<sup>263</sup> P. Palmaz Rucker, *Der Ursprung unseren Begriffe nach Richard von Mediavilla*, is definitely too stern when he states that Richard's thought on intelligible species as confused (pp. 105-110, and 139).

mediante intellectus agens causat in intellectu possibili intellectionem universalis, quod in sequenti distinctione declarabitur.<sup>264</sup>

The context of this discussion indicates that the “refulgentia” causing the intellectual act should not be identified with the intelligible species. This does not exclude the possibility of coherently interpreting the “refulgentia” as instrumental for producing the intelligible species in the possible intellect, which is thereby actualized. This interpretation, however, is inconsistent with a claim formulated later on in the same section, which is referred to by Richard in the same context—namely, that the “refulgentia” is immediately present to the mind:

Et praeterea de potentia fantasmatis repraesentantis rem sub esse singulari, educitur per naturalem actionem intellectus agentis, quaedam refulgentia rem repraesentans sub esse universali non separata a fantasmate secundum esse reale, sed in ipso remanens, & sibi quasi colligata, quae directe, & immediate obijcitur intellectui, ut ulterius ducens in cognitionem rei, cuius est similitudo, sub ratione, qua universalis, aut ipsa res sit repraesentata per dictam refulgentiam est directum, et immediatum obiectum intellectus.<sup>265</sup>

The “refulgentia” functionally supersedes mediating *mental* representations by representing sensible things as universal. As Palmaz suggested, Richard’s reflections on the production of cognitive content are most likely influenced by Henry of Ghent’s view about the illumination of phantasms, which excludes *ipso facto* the necessity of intelligible species<sup>266</sup>. Richard does not reject his notion. However, he no longer understands it as a mediating principle, since the traditional causal chain is reversed: it is the intellection that causes the species<sup>267</sup>. Thus, Richard holds a view of intelligible species as, basically, mnemonic or mental contents, a view that Olivi presented as the only reasonable, albeit impoverished, interpretation of intelligible species<sup>268</sup>.

Richard’s reflections on the origin of intelligible species, in the commentary on the fourth book of the *Sentences*, seem to contradict his earlier account of the “refulgentia” as a basis for intellectual

<sup>264</sup> Cf. *In II Sententiarum*, dist. 24, a. 3, q. 4 ad 5, 313a.

<sup>265</sup> *In II Sententiarum*, dist. 25, a. 5, q. 1, ad 3.

<sup>266</sup> Cf. Palmaz Rucker, *Richard von Mediavilla*, 138-39; see also p. 144, where he discusses *Quaestio Disputata*, 43, a. 4.

<sup>267</sup> *In II Sententiarum*, dist. 25, a. 5, q. 1, ad 4.

<sup>268</sup> Cf. § 3.4.

knowledge. Initially, he discards various traditional solutions to the origin of species, and questions the purported role of phantasms: in arguing against naturalistic accounts of the origin of intelligible species, he rejects the idea that the phantasm itself becomes the species, or that the latter is contained potentially in the former. Then he suggests that the intelligible species is produced from the potentiality of sensory representations, and immediately corrects this statement when he concludes that the “species intelligibilis” is produced from the potentiality of the possible intellect<sup>269</sup>. The latter claim substantially agrees with the Aristotelian view of the cognitive object *inside* the mind, as well as with Thomas’ view of the role of sensory images in the production of cognitive contents<sup>270</sup>. But the overall account of intelligible species is hardly reconcilable with the notion of a “refulgentia” originating from the phantasm.

In discussing knowledge from intelligible species, Richard formulates a problem that will occupy the mind of many future generations, namely, how does the intellect get to know substances on the basis of (accidental) species<sup>271</sup>. Surprisingly, this problem—inherent in the view of intelligible species as dependent upon sensory representations<sup>272</sup>, and possibly descending from Avicenna’s idea of science<sup>273</sup>—was not raised explicitly before the 1280’s. The

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<sup>269</sup> Cf. *In IV Sententiarum*, dist. 49, a. 4, q. 6c: “Praeterea, sicut spiritus non potest effici corpus, nec econverso, sic nec similitudo spiritualis potest fieri forma corporalis, nec econverso, quamvis de potentia formae corporalis educi potest similitudo spiritualis: unde illa eadem similitudo, quae est fantasma nunquam fit species intelligibilis, nec efficitur in intellectu sicut in subiecto: accidens enim non mutat subiectum, sed de potentia fantasmatis educitur per virtutem intellectus agentis species intelligibilis, quae in intellectu possibili recipitur sicut in subiecto, vel ut melius dicam, educitur de potentia intellectus possibilis per virtutem intellectus agentis mediante fantasmate ut instrumentali agente, quia fantasma illam actionem agit in virtute luminis intellectus agentis.”

<sup>270</sup> See *De veritate*, q. 10, a. 6, ad 7um.

<sup>271</sup> *In II Sent.*, dist. 24, a. 3, 309b f. For the background of this problem in Aristotle, see I. Block, “Aristotle and the physical object”, in *Philosophy and Phenomenological Research* 21(1960), 93-101.

<sup>272</sup> Roger Bacon thought that substances and accidents produced each their own species; cf. *De multiplicatione specierum*, I.2. Thomas did not regard as problematic the knowledge of substances based on representational devices originating in the phantasms; see *Summa theologiae*, I, q. 93, a. 6, ad 4; *In Physicorum VII*, lectio 5. 917.

<sup>273</sup> See Avicenna, *Liber de Philosophia prima sive scientia divina*, vol. I, Louvain-Leiden 1977, I. III.8, 163, where human science is grounded on mental impressions which are qualified as “accidentes in anima”.

human intellect receives “per ministerium sensuum” the intelligible species, and therefore the latter concern accidents. In other words, intelligible species do not represent substantial essences<sup>274</sup>. Richard, in fact, states that knowledge of substances can be attained only by *argumentatio*<sup>275</sup>. Thus, knowledge of substances precedes knowledge of accidents “ex parte sua”, rather than “quoad nos”<sup>276</sup>. Simple apprehension of substances is not a direct, unreflective act: the mind can access the essence of substantial reality only by reflecting on the (cognitive) effects (the intelligible species) of mechanisms involved in the production of cognition.

Richard’s position is marked by a fundamental tension. On the one hand, he claims that intelligible species originate from the potentiality of the possible intellect, which seems to imply that the species are not ‘impaired’ by sensory stimuli. On the other hand, evidently motivated by the goal of ensuring objective references for cognitive contents, he emphasizes—most clearly with the “refulgencia” doctrine—that sensory representations do bear on intellectual acts.

#### 4.3. Roger Marston

Roger Marston<sup>277</sup>, apparently unconcerned with the dilemma haunting Matthew and Richard, defends the necessity of intelligible species and rejects the basic tenets of Henry’s view<sup>278</sup>. He excludes, however, that phantasms can effectively contribute to generating

<sup>274</sup> *In II Sent.*, dist. 24, a. 3, 310a.

<sup>275</sup> *In II Sent.*, dist. 24, a. 3, 310a. His position is thus similar to that of Vital du Four; cf. his *Quaestiones de cognitione*, q. 5, 271.

<sup>276</sup> *In II Sent.*, dist. 24, a. 3, 311a. This issue will reappear in Thomas Sutton who probably reacts to Giles of Rome; cf. ch IV, § 1.4. Duns Scotus thinks that the substance is known only in intuition; cf. *Lectura in librum primum Sententiarum*, ed. Balic, Civitas Vaticana 1960, dist. 3, 266. During the Renaissance and the Second Scholasticism this issue will be discussed by Scaliger, Rubio and others; cf. ch. IX, § 2.2, and ch. X (Part III, forthcoming).

<sup>277</sup> Roger Marston, ca. 1245—ca. 1303; Franciscan theologian; studied at Paris under John Peckam, probably between 1269 and 1272; he was the 13th minister of the English Franciscan province, probably between 1292 and 1298. His *Quaestiones disputatae de anima* were written between 1282-94.

<sup>278</sup> Roger Marston, *Quaestiones disputatae de anima*, in *Quaestiones disputatae de emanatione aeterna, de statu naturae lapsae et de anima*, Quaracchi 1932, q. 9, 412-16; see q. 1, p. 215: species are necessary for attaining knowledge of “quid est”; cf. also Prezioso, “L’attività del soggetto pensante”, 294-99.

intelligible species, and therefore, like his colleagues Matthew and Richard, ends up in the environs of Olivi: the agent intellect produces the species in virtue of its “colligantia” with the phantasms<sup>279</sup>. Marston also rejects the illumination of phantasms<sup>280</sup>. Accordingly, he regards Aristotle’s abstraction as a “collectio”, because a direct grasp of the universal on the basis of phantasms is impossible<sup>281</sup>. The intellect itself generates species that are instrumental in knowing things, that is, in knowing the “universale extra animam”<sup>282</sup>.

The curious situation of an intellect producing species “in presence” of causally inert phantasms also recurs in Roger. Paradoxically, knowledge must be “directed towards” these sensible images, for otherwise the objective reference of its contents is lost. The gap between, on the one hand, sensory representations, organized in the physiological structure of the body, and, on the other hand, the immateriality of mental representation and cognition cannot be bridged, for the intellect cannot ‘undergo’ or ‘suffer’ anything from external reality.

How is this impenetrable intellect, deprived of innate contents, supposed to produce universal species by comparing sensory images? Roger’s conceptual tools for answering this question are inadequate: the postulate of a “colligantia” between the senses and the

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<sup>279</sup> Cf. *Quaestio* 9, 420f; this section is examined at length by Prezioso, “L’attività del soggetto pensante”, 301-09. It is quite probable that Marston was acquainted with Olivi’s works: on page 394 he mentions, in fact, both the “colligantia” doctrine and the metaphor of the self-moulding wax tablet. The “colligantia” between sense organs and superior cognitive faculties was also theorized by Matthew of Aquasparta; cf. *Quaestio de cognitione* III, 260.

<sup>280</sup> *Quaestio* 9, 420: “Nec enim capit sensus meus quo modo virtus aliqua penitus spiritualis possit per se vel per aliquam sui lucem rei alicui corporali, cuius non est perfectio, virtutem tribuere se multiplicandi, cum res omnino spiritualis nequaquam possit corpus aliquod informare per modum quo accidens adhaeret subiecto.”

<sup>281</sup> *Quaestio* 9, 424: “Et hanc collectionem, qua universale discurrendo collative sub ratione qua universale est cognoscitur, voco abstractionem, de qua loquitur Philosophus, dicens quod universale est aliquid a phantasmatis abstractum, non quod per se loquendo ab ipsis phantasmatis abstrahat, sed a singularibus per phantasmata apprehensis abstrahit universale”. See also Richard of Middleton’s proposal for the modalities of knowledge of substantial essences, *supra*.

<sup>282</sup> *Quaestio* 9, 420-21: “Utraque siquidem opinio hoc conatur adstruere, quod nulla species fiat a re corporali in anima, sed quod anima intellectiva in se facit omnes species quibus cognoscit”; see also pp. 416, and 423-24. For the possible influence of Marston on Capreolus and Suarez, see Prezioso, “L’attività del soggetto pensante”, 304-305.

more properly cognitive capabilities is insufficiently argued for, and is not detailed enough to account for their effective interplay.

#### 4.4. *Vital du Four*

After 1277, most secular and Franciscan theologians opted for a "concordia" between Augustine's noetics and Peripatetic cognitive psychology. This was a formidable task, for the specific premises they had to work with do not readily admit of a coherent interpretation.

There were exceptions to this tendency: the Franciscan friar Vital du Four<sup>283</sup> is a case in point. Notwithstanding an evident doctrinal dependence on his predecessors<sup>284</sup>, he conceives of sensible representations as a substantive factor in the genesis of intellectual knowledge<sup>285</sup>.

Like Thomas, Vital holds that in the order of intentional causality a possible influence of inferior layers on superior ones cannot be excluded, since material things may have a goal transcending their ontological nature as such<sup>286</sup>. At the same time, the intellect is the

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<sup>283</sup> Vitalis de Furno, ca. 1260 near Bordeaux—1327 Avignon; entered the Franciscan Order at an early age and was sent to the Studium Generale in Paris in 1285; read the *Sentences* in Paris in 1291-1292; read also on the fourth book in Montpellier, where he also read extensively on medicine; in 1297 transferred to the University of Toulouse where he was to continue teaching for the next ten years; engaged in the theological debates over the doctrines of Peter Olivi; 1305 published *Speculum morale totius Sacrae Scripturae*; professional career ended with his election as Provincial of Aquitania in 1307; his talent as a negotiator in delicate affairs was recognized not only by his Order, but also by the Holy See. For more biographical data, see J.E. Lynch, *The Theory of Knowledge of Vital du Four*, St. Bonaventure-N.Y. 1972, 1-9.

<sup>284</sup> Vital du Four, *Huit Questions Disputées sur le problème de la connaissance*, ed. R.A. Gauthier, in *Archives d'histoire doctrinale et littéraire du Moyen Âge* 2(1927), 151-337. Vital is difficult to follow, because of a dense style and a failure to indicate clearly when he is expounding the opinion of others and when he is speaking for himself. Sometimes his dependence assumes the form of a direct plagiarism; cf. R.A. Gauthier, "Introduction", in *op. cit.*, 155, who indicates as doctrinal sources John Peckam, Matthew of Aquasparta, Roger Marston, Henry of Ghent, and Giles of Rome. For his relation with Matthew, cf. Prezioso, "L'attività del soggetto pensante", 280-81.

<sup>285</sup> Cf. L. von Unterwinkel, "Die Intuitionslehre bei Vitalis de Furno, O. Min. (†1327)", in *Collectanea Franciscana* 25(1955), 53-113, and 225-253, on pp. 97-98.

<sup>286</sup> *Quaestio* III, 221: "Unde cum omnia creata sint ut in hominem perficiant et homini servant, sic secundum ordinem naturalem mutantur et transmutantur et fiunt spiritualia ex corporalibus, sicut requirit ipsa ratio humanae perfectionis. (...) et sicut nutrimentum quantumcumque grossum habet aspectum ad formam membri humani ut sit transmutabile virtute animae sicut exigit introductio illius formae, sic omnis res de

supreme cognitive capability, and therefore permeates and perfects the senses<sup>287</sup>. This overall view ensures the effective interplay of cognitive faculties and sensible world<sup>288</sup>. Within this doctrinal context, intelligible species are necessary for actualizing the possible intellect<sup>289</sup>. Vital denies that intelligible species are impressed, thereby characterizing them both as “acceptae a rebus” and as a proper product of the intellect<sup>290</sup>.

#### 4.5. *James of Viterbo and Agostino Trionfi*

After Giles of Rome, the reactions within the order of Augustinian Hermits led to conflicting positions, as the works of James of Viterbo and Agostino Trionfi clearly indicate. The former espouses a markedly innatist thesis on intelligible species, whereas the latter outlines a strictly sense-dependent view of knowledge.

The psychological views of James of Viterbo<sup>291</sup> do not diverge much from those of early 13th-century masters, with the noticeable

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mundo quantumcumque corporalis et grossa habet aspectum ut sit cognoscibilis ab intellectu humano et ut sit transmutabilis secundum rationem multiplicationis speciei, donec fiat omnino intelligibilis.” See also Thomas, *De potentia*, q. 5, a. 8, quoted in ch. II, § 3.2.

<sup>287</sup> Cf. *Quaestio* III, 226. See also 191: the agent intellect provides the phantasms with an “actualitatem universalitatis” or a “vim” enabling them to move the possible intellect. The probable doctrinal background of these conceptions is in the works of Averroes and Giles of Rome.

<sup>288</sup> Cf. L. von Unterwinkel, “Die Intuitionslehre bei Vitalis de Furno”, 104-106.

<sup>289</sup> *Quaestio* II, 209-210.

<sup>290</sup> *Quaestio* III, 218, where Vital rejects the position according to which the “gignatio speciei a specie vel abstractio speciei intelligibilis a phantasmata” is only “occasionalis”; cf. pp. 224 and 227: “Recipit ergo anima speciem intelligibilem a rebus, quam magis dicitur ipsa facere in seipsa modo superius exposito quam res in animam, quamvis utrumque sit verum, ut actus intelligendi sit effective ab intellectu, non autem absque specie obiectum absens repraesentante.” Vital denies that species are impressed; cf. q. I, 182-3. As regards knowledge of substance, his position is similar to that of Richard, cf. q. V, 252-71. For an extensive discussion of his position on intelligible species in the context of the contemporary doctrinal dispute, cf. Lynch, *The Theory of Knowledge of Vital du Four*, ch. III and IV.

<sup>291</sup> Jacobus de Viterbio, ca. 1255—1308; joined the order of the Augustinian Hermits around 1270 in Viterbo; studied theology in Paris from 1278/9 till 1282/3; became master of theology in Paris ca. 1293 and succeeded Giles of Rome in the Augustinian chair, functioning as regent master until 1296/7; in charge of Studium Generale in Naples beginning 1300; bishop of Benevento 1302; archbishop of Naples 1303. For more bio-bibliographical data, see Jacobus de Viterbio, *Disputatio prima de Quolibet*, ed E. Ypma, Roma 1968, “Introduction”, v-vi.

difference that he mastered Proclus and Simplicius<sup>292</sup>. Sensory information and intellectual knowledge can be attained only by virtue of the active nature of the soul. Accordingly, the distinction between possible and agent intellect is relativized<sup>293</sup>, and an abstraction based on phantasms is rejected. The human soul knows by virtue of a power granted by God, and on the basis of inborn "aptitudines":

Non enim dicitur intellectus abstrahere a fantasmatis, ea depurando vel illustrando, sed quia, ab ipsis fantasmatis excitatus, puriori modo cognoscit quam fantasia. (...) Haec autem abstractio intellectus ex ipsa potentia intellectuali procedit, quae, secundum aptitudines inditas, primo habet ordinem ad intelligendum universalis, et per ipsa ad particularia, et prius ad intelligendum substantias quam accidentia.<sup>294</sup>

In accordance with Godfrey, James claims that the intellect does not process sensory representations, although it is stirred by them before producing its own act<sup>295</sup>. James endorses a form of Platonic innatism, whereby the actualization of inborn cognitive contents is occasioned by perceptual stimuli. His elaborate argument for the necessity of "species intelligibilis"<sup>296</sup>, based on four different motives, should not mislead us into thinking that he regards mental representations as (partially) caused by sensory images. Indeed, in this context he simply identifies cognitive species with the proper objects of knowledge<sup>297</sup>.

<sup>292</sup> *Disputatio prima de Quolibet*, "Introduction", xxii, and *Disputatio secunda de Quolibet*, ed E. Ypma, Roma 1969, "Introduction", vi.

<sup>293</sup> *Quolibet* I, q. 12, 170-173.

<sup>294</sup> *Quolibet* I, q. 12, 178. These issues are discussed by E.P. Mahoney, "Themistius and the agent intellect in James of Viterbo and other thirteenth-century philosophers (Saint Thomas, Siger of Brabant and Henry Bate)", in *Augustiniana* 23(1973), 422-467, on pp. 422 and 452. James' innatist position will be rejected by the later Augustinian friar Alphonsus Vargas Toletanus, *In tres Aristotelis libros De anima subtilissimae quaestiones*, Vincentiae 1608, 81b-82b. James' innatism will be also referred to by Caietanus in the sixteenth century; cf. his *Commentaria in libros Aristotelis de Anima*, Florentiae 1509, K2ra.

<sup>295</sup> *Quolibet* I, q. 12, 174-75.

<sup>296</sup> *Quolibet* I, q. 13, 185-186 *propter*: a. "repraesentationem"; b. "depurationem"; c. "actionem"; d. "conservationem".

<sup>297</sup> *Quolibet* I, q. 13, 183: "Quantum igitur ad primum, sciendum est quod species, secundum proprietatem nominis, idem est quod forma. (...) Et quia id, quod est obiectum intellectus, est quod quid est, ideo forma vel species dicitur quod quid est." Cf. also pp. 182-85, where he argues for the identification of species and ideas invoking Aristotle and Augustine, and *Disputatio secunda de quolibet*, ed. E. Ypma, Roma 1969, q. 6, 98-100.



Any problems that arise if one takes phantasms as the foundation of intellectual knowledge<sup>298</sup> vanish—so James observes—as soon as one accepts the presence of unacquired species in our mind. Each species, described elsewhere as “causa et principium actualis cognitionis” or “ratio intelligendi”<sup>299</sup>, can be regarded either as “aptitudo indita” or as “cognitio”. The latter is, roughly, an actualized species<sup>300</sup>.

Viterbo’s reference to species as “idoneitates” or “aptitudines” may suggest that he conflates representation of and competence for producing a cognitive content. However, inborn species are chiefly responsible for the content of our knowledge, whereas the active mind is the very capability to perform mental operations. Indeed, the only productive factor of intelligibility is the agent intellect, which is inactive with respect to phantasms. James remains faithful to an overall Platonic-Augustinian view of sense perception, which merely provides excitations for our soul<sup>301</sup>. Any substantive interplay between the intellect and sensory images is thus excluded<sup>302</sup>.

James’ psychological ideas are paradigmatic of a medieval nativist position. The species are eventually assimilated to forms or cognitive objects, latently present in our soul as “aptitudines”, and actualized by the mind on the occasion of a sensory stimulus. This strategy for explaining knowledge acquisition—superseding early 13th-century positions, and even Peter Olivi’s view—will be pursued, in a more Proclean key, by Dietrich of Freiberg, and will be adopted by Ficino during the 15th century.

Agostino Trionfi<sup>303</sup>, also belonging to the order of Augustinian Hermits, expressed views strongly deviating from James’ innatism

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<sup>298</sup> If the phantasms caused our species, one would be unable to attain knowledge of substances; cf. *Quolibet* I, q. 13, 183f.

<sup>299</sup> See, respectively, *Quolibet* I, q. 14, 193 and *Disputatio quarta de quolibet*, ed. E. Ypma, Roma 1975, q. 24, 92.

<sup>300</sup> *Quolibet* I, q. 13, 187-89, and q. 14, 193-4 and 197. Innate species enable one to circumvent the problem raised by Richard of Middleton and others; cf. 189, ll. 212-215.

<sup>301</sup> *Quolibet* I, q. 12, 174-5, 190; *Quolibet* II, q. 16, 168-9. Also Godfrey’s virtual contact is rejected; cf. *idem*, 163-164.

<sup>302</sup> *Quolibet* I, q. 12, 171-72.

<sup>303</sup> Augustinus ab Anchona (Trionfi), ca. 1270/3—1328; Augustinian Hermit, studied in Paris 1297-1300; lectured on the *Sentences* there 1302-1304 or 1304-1306; lector at the Augustinian School in Padua; returned to Paris as master of theology 1313-

in his *Opusculum perutile de cognitione animae et eius potentiis*. The title is reminiscent of early 13th-century treatises; its philosophico-technical content, however, is quite innovative: to a certain extent, since it is not a *De anima* paraphrase or commentary, it anticipates Peter of Ailly's *Tractatus de anima*<sup>304</sup>.

The first part of Agostino's *Opusculum* is devoted entirely to analysing the multiplication of species in sense perception, on the basis of an unconditional acceptance of impressed species in the sensible domain. Interestingly, Agostino emphasizes that science, acquired by the intellect, is nonetheless strictly sense-dependent, and therefore requires the proper functioning of many "media", that is, the various external and internal senses. The senses play a pivotal role in knowledge acquisition, because material things cannot impress their species directly upon the intellect<sup>305</sup>. A determinate "ordinatio" or "connexio" between these media is necessary to ensure the cognitive grasp of sensible reality<sup>306</sup>. And Trionfi accepts the necessity of formal mediation in intellectual cognition also invoking the authority of Augustine<sup>307</sup>, but principally on independent philosophical grounds.

The intellect does not possess sufficient actuality to "inform itself", whereas intelligible species represent sensible objects in ways that are suitable for triggering the mental act<sup>308</sup>. Unlike many contemporary colleagues, Agostino rejects the view that the intelligible species terminates the intellect's act, and consequently characterizes the former as "ratio intelligendi"<sup>309</sup>. Like Giles of Rome, Trionfi holds that intelligible species—often called "similitu-

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1315; chaplain to Charles, son of King Robert of Naples, in 1322. The edition of his *Opusculum perutile de cognitione animae et eius potentiis*, Bononiae 1503 was prepared by Alessandro Achillini (see also ch. VI, § 2.2); cf. B. Nardi, *Saggi sull'aristotelismo padovano dal secolo XIV al XVI*, Firenze 1958, 239.

<sup>304</sup> See ch. V, § 1.1.

<sup>305</sup> *Opusculum*, I, cap. 10.

<sup>306</sup> *Opusculum*, I.c., Cir: "Si igitur ille est modus acquirendi scientiam: quia mediantibus sensibus tam exterioribus quam interioribus: causatur in nobis scientia: est necesse in nobis sensus existere per connexionem ad invicem: et per impressionem factam in eis: ut scientia in nostro intellectu inprimi possit." See also *idem*, cap. 11.

<sup>307</sup> See *Opusculum*, Pars II, c. 1, Cv<sup>r</sup>, where he refers to *De Trinitate*, XIV.

<sup>308</sup> *Opusculum*, II, c. 2, Cv<sup>r-v</sup>.

<sup>309</sup> *Opusculum*, II, c. 2, Cv<sup>i-v</sup>.

dines"—are caused by phantasms<sup>310</sup>. At an earlier stage in his *Opusculum*, Trionfi maintains that material things and species can influence the immaterial intellect, thus presupposing a "depuratio" of the phantasms by the agent intellect that enables them to move the possible intellect<sup>311</sup>. The purified "similitudines rerum sensibilium" are assimilated to "species rerum", which—once actualized by the agent intellect—may inform the possible intellect and cause its act:

Nam licet essentia animae sit formalior; et actualior quacumque alia re sensibili: tamen etiam similitudines rerum sensibilium depurate a conditionibus materialibus: per lumen intellectus agentis: habent quandam actualitatem: quam non habet ipsa essentia anime secundum se et secundum predictam actualitatem quam recipiunt species rerum ab ipso intellectu agente: poterunt huiusmodi species informare ipsum intellectum possibilem: et poterunt actum intelligendi in ipso causare.<sup>312</sup>

In the second part of his treatise, Trionfi reiterates that phantasms are endowed with the capacity to produce intelligible species and causing, through the latter, the mind's act<sup>313</sup>. Thus, he departs from Giles' Neoplatonic view of a twofold illumination by the agent intellect, once with regard to sensory representations and once with regard to the possible intellect<sup>314</sup>. He claims that the intellect depends on the illuminated phantasm both for its act and for its cognitive content. Evidently aware of possible objections against such a claim, he addresses two related questions: (i) How can a material, accidental phantasm move the intellect? (ii) How can the intellect get to know substantial reality on the basis of sensory—and thus purely accidental—representations<sup>315</sup>?

Like Giles of Rome, Trionfi emphasizes the formal link between phantasm and intelligible species, and yet he denies that the intelli-

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<sup>310</sup> *Opusculum*, II, c. 2, Cviir. Duns will implicitly accept the impression of the intelligible species; see *Ordinatio*, in *Opera omnia*, ed. C. Balic e.a., vol. III, Città del Vaticano 1954, liber I, dist. 3, q. 1, 232-33. See also Giles' position in his *In II Sent.*

<sup>311</sup> *Opusculum*, Pars I, c. 10-11, Ci-ii. This *depuratio* is specified in Pars II, c. 5, Dii-iii; for discussion, see *infra*.

<sup>312</sup> *Opusculum*, Pars II, c. 1, Cvr. For the complex causal chain from phantasm to intelligible species, see also Pars II, c. 6.

<sup>313</sup> *Opusculum*, II, c. 2, Cviir; cf. c. 5, Diir.

<sup>314</sup> Notice, however, that according to Giles, the illumination of the possible intellect is mediated by the intelligible species; see § 2.3.

<sup>315</sup> *Opusculum*, II, c. 3.

gible species are equinumerous with the species in the phantasy<sup>316</sup>. Thus, the intelligible species is not merely a transformed sensory representation. The purifying illumination of the agent intellect is invoked to establish an otherwise unlikely connection between phantasm and species: for the light of the agent intellect enables the phantasm to cause knowledge of substantial reality in the intellect<sup>317</sup>, although the phantasm itself is unknowable to the intellect because of its accidental nature. Indeed, Trionfi allows for accidental qualities causing substantial changes, and mentions fire and sperm as examples<sup>318</sup>.

After solving these basic problems, Trionfi attempts to specify the meaning of the frequently invoked “depuratio”, that is, the alleged effect of the agent intellect’s illumination. In the fifth chapter of the second part, he claims that this depuration mainly concerns an “admixtio”, and illustrates this idea by means of the simile of a mixture of wine and water, and the process of extracting ‘pure’ wine from this fluid. Supposing that ‘pure’ wine can indeed be extracted from this mixture, Trionfi implicitly suggests that depuration is a process capable of isolating the specific feature in virtue of which the phantasm is “repraesentiva nature rei”<sup>319</sup>. The presence of this “natura”, which is also compared with iron separated from rust, enables sensory representations to cause intelligible species and the mental act itself, albeit only indirectly<sup>320</sup>.

Trionfi attributes to the agent intellect roughly the same powers assigned to it by Albert; thus, he attempts to preserve the immateriality of the intellectual act without committing himself to any form of innatism. Moreover, as his explanation for the genesis of sense perception and cognition, Trionfi presents an impression doctrine virtually identical to its analogue in perspectivist optics,

<sup>316</sup> *Opusculum*, II, c. 5, Di<sup>r</sup>-v.

<sup>317</sup> See *Opusculum*, II, c.3, Cvii<sup>v</sup>: “Primum autem sic patet: dicamus quod non est inconueniens aliquid agere ultra suam speciem in virtute alterius: fantasmata igitur quae sunt accidentia quedam vel similitudines accidentium: quamvis in virtute propria similitudines substantiarum in intellectu causare non possunt: in virtute tamen luminis intellectus agentis irradiantis super talia fantasmata: non est inconueniens similitudines substantiarum ab huiusmodi fantasmatis in intellectu causari.”

<sup>318</sup> See *Opusculum*, II, c. 3, Cvii<sup>v</sup>.

<sup>319</sup> *Opusculum*, II, c. 5, Dii<sup>v</sup>.

<sup>320</sup> *Opusculum*, II, c. 5, Dii<sup>v</sup>-iii<sup>r</sup>. Alphonsus Vargas Toletanus, another Augustinian Hermit will oppose the view of the intellect’s act as caused by phantasms; see ch. IV, § 3.5.

since he regards intellectual knowledge as depending upon intelligible species caused by illuminated phantasms. However, the strict relation between sensory and mental representations does not entail a one-to-one correspondence between them, because the illumination of phantasms is thought of as a substantive transformation.

In spite of these obvious similarities, it is quite possible that Agostino, not directly influenced by perspectivist optics or by Albert, simply endorsed a species-doctrine widely accepted at the beginning of the 14th century by most masters of arts<sup>321</sup>. This is a clear sign of the open-mindedness of the intellectual figures from the order of Augustinian Hermits, already noticeable in Giles, and recurring in Thomas of Strasbourg and Alphonsus Vargas Tolanus.

### § 5. NEOPLATONIC VERSIONS OF INTELLIGIBLE SPECIES

A somewhat singular place in the species controversy is occupied by the 'encyclopedist' Henry Bate and the Dominican friar Dietrich of Freiberg. These two authors share notable scientific interests and a clear Neoplatonic tendency. They contribute to the discussion on intelligible species from a relatively independent perspective.

#### 5.1. Henry Bate

With his *Speculum divinatorum et quorundam naturalium*<sup>322</sup>, Henry Bate<sup>323</sup> has given us a first rate encyclopedic effort. Driven by a deeply felt need for reconciliation, unhampering his reasonable criteria of selection, Bate's wealth of quotations<sup>324</sup> offers us the possibility of browsing through the average library of a scientist and

<sup>321</sup> Cf. ch. IV, § 4.

<sup>322</sup> Hitherto three volumes are published: Henricus Bate, *Speculum divinatorum et quorundam naturalium*, vols. I-II, ed. E. van de Vyver, Louvain-Paris 1960-67; vol. III, eds. H. Boese and C. Steel, Leuven 1990.

<sup>323</sup> Henricus Bate, 1246 Malinas—1310; around 1266-1272 student of the Faculty of Arts in Paris, where he received the master's degree; obtained an ecclesiastical benefice in 1273 and returned to Malinas; in 1274 attended the Lyon ecumenical council, where he met William of Moerbeke; resided in Liège from 1281; defends his protector Gui at the papal court in Orvieto in 1292.

<sup>324</sup> Extensive sections of his *Speculum* contain extracts from Moerbeke's translations of Proclus, Themistius, Simplicius, and Philoponus.

philosopher at the turn of the 13th century<sup>325</sup>. He regarded the species doctrine as a pivotal philosophical issue, as is testified by the first chapter of Book I, devoted to a detailed examination of visible species and intentions, and including a meticulous characterization of their ontological status<sup>326</sup>.

In the second book, Bate presents a theory of "species intelligibiles", basically identifying them with the possible intellect<sup>327</sup>. From Thomas he derives the principle that one knows things rather than species<sup>328</sup>. However, he excludes that the intellect receives 'new' species<sup>329</sup>: all species are already virtually present in the intellect<sup>330</sup>, for the potentiality of the possible intellect is accidental rather than essential<sup>331</sup>. Also in this second book, Henry is keenly interested in the ontological status of the species; surprisingly, he characterizes them as "entia realia"—when considered as such<sup>332</sup>—

<sup>325</sup> Cf. "Introduction", vol. I, xxi-ii. He started his work probably in 1285/6, which was finished about 1301-05.

<sup>326</sup> He considers them neither as substances nor as accidents (76), determining their nature as 'equivocally spiritual' (82); accentuating their non-accidental character, although they are "sine materia" (83), he decides that they belong to the "genus relationis" (89) subsequently defining them as "alterabilis passio". The doctrinal background of his analysis is, obviously, formed by the optics of Alhazen, Bacon, and other authors.

<sup>327</sup> *Pars* II, c. 2, 18-19: "Intellectus vero possibilis neque se ipsum intelligere neque aliquatenus intelligibilis esse potest, ut post apparebit, nisi quatenus ipse nihil aliud est essentialiter quam ipsae rerum species intelligibiles, nullatenus autem earum subiectum existens, alioquin oporteret ipsum intelligibilem esse per propriam sui speciem vel suae quidditatis, et non per species rerum obiectarum, quemadmodum sensus ac sua quidditas intelligibilis est."

<sup>328</sup> *Pars* II, c. 7, 38.

<sup>329</sup> *Pars* II, c. 18, 75.

<sup>330</sup> *Pars* II, c. 18, 79: "(...) sic et concludendum de intellectu, quod simpliciter loquendo species intelligibilium formaliter in ipso nequaquam recipiuntur, sed virtualiter sibi inexistunt seu potestate, secundum quod et vult Avicenna (...)"; see c. 38, p. 145. There is, I believe, a strict relation to Giles' and Godfrey's doctrine of the 'virtual' presence of the intelligible species in the agent intellect. Bate, however, provides a straightforward Avicennean interpretation of this concept. See, in this context, also Richard of Middleton's ideas on the production of species from the potentiality of the possible intellect.

<sup>331</sup> *Pars* II, c. 20-21, 86-92. His innatistic interpretation of the possible intellect is perhaps partially due to the influence of Philoponus' noetics. Cf. *Commentum in de anima*, 9-11, 16, 23-4, 40; see also ch. I, § 4.3. On Bate's use of Philoponus, see G. Verbeke, "Introduction" to the forenamed work, lxxxii-iv. However, other authors had already stressed the accidental nature of the possible intellect's potentiality; cf. ch. II, § 1.5 and, in this chapter, Godfrey of Fontaines and Richard of Middleton.

<sup>332</sup> *Pars* II, c. 21, 92: "Relinquitur itaque quod, licet species intelligibiles secundum unam considerationem, ut infra magis patebit, sint entia quaedam realia, secundum aliam tamen, secundum quod ad genera suorum obiectorum cognoscibilium rela-

or as “ideae”<sup>333</sup>. The receptivity of the possible intellect is a “comprehendere”, because it does not receive the species as “subiectum”<sup>334</sup> or as impressed “ab extra”<sup>335</sup>. Moreover, also the agent intellect contains the intelligible species, though only “quodam ideali modo”<sup>336</sup>. Indeed, Henry considers this intellect as knowing “in actu”<sup>337</sup>. Thus, it is quite surprising that Bate sees the phantasm, although constrained by the dynamics of the active intellect, as playing a role in the intellectual act<sup>338</sup>.

The work of Henry Bate is a significant example of the fact that various ancient and previous medieval doctrines imbued the psychological discussion at the turn of the century. Paradoxically, though endorsing a Neoplatonic innatism, he does not relinquish Peripatetic views on the impact of sensory representations in the generation of intellectual cognition. Burdened with the contrasting views of his sources, Henry is a mirror of confused disputes on the function and origin of mental representations in the era between Thomas and Duns Scotus. During the 15th century, he will be mentioned by John of Malinas<sup>339</sup>.

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tae, quorum similitudines quaedam sunt, non sunt illorum generum entia simpliciter, sed modo diminuto sive secundum quid, ut dictum est.” For discussion of the notion of “esse diminutum”, see ch. IV, § 1.5.

<sup>333</sup> *Pars* II, c. 22, 93: “Huiusmodi itaque respectus seu proportio intellectus sic se habentis actu ad phantasma determinatum, seu intellectus hoc modo se habens, species dicitur intelligibilis aut universale seu idea illius phantasmatis, aut obiecti cuius est illud phantasma.” Already in Ancient thought this assimilation is rather common; cf. the positions of Macrobius and Calcidius, discussed in ch. I, § 4.1. In medieval philosophy, the term “idea” is generally reserved for God’s thought, i.e. ideas are identified with separate species. Many Renaissance authors assimilated the intelligible species to (human) ideas; cf. Marsilio Ficino, Antonio Polo, Giordano Bruno, Scipio Agnello; for a discussion of their respective positions, see ch. VI, § 1.3, ch. VIII, § 1.4, and 3.3-4.

<sup>334</sup> Cf. Albert’s polemical discussions, examined in ch. II, § 2.1.

<sup>335</sup> *Pars* II, c. 23, 94, 96-97. See also Godfrey’s and John Baconthorpe’s (ch. IV, § 2.2) positions.

<sup>336</sup> *Tertia Pars*, 160. Cf. Giles of Rome’s view that the agent intellect contains the intelligible species “virtualiter”; see § 2.3.

<sup>337</sup> *Tertia Pars*, c. 2, 164. He does not formulate explicitly, but at least presumes a hierarchy between possible and active intellect; cf. the positions of Albert and Dietrich. This idea derives from later Neoplatonic authors, such as Iamblichus, Proclus, and Simplicius.

<sup>338</sup> *Tertia Pars*, in vol. II, c. 1, 159: “Fit autem phantasma movens intellectum in actu per agentis actionem, quae abstrahere vocatur, quod est speciem intelligibilem a conditionibus individuandis in phantasmate denudare.”

<sup>339</sup> Cf. *Commentaria trium librorum De anima* (...), Köln 1497, S vira.

## 5.2. Dietrich of Freiberg

The understanding of Thomas' specific views on cognitive psychology seems to have rapidly deteriorated within the Dominican community. This is already apparent in the comment on the *Sentences* of John of Paris, one of the early disciples of Thomas, who discusses Aquinas' psychology in an explicit Augustinian key<sup>340</sup>. Obviously even more distant from Thomas, Eckhart claims the primacy of "intelligere" on "esse"<sup>341</sup>.

An outstanding case of this tendency among Dominicans is Dietrich of Freiberg<sup>342</sup>, who departs radically from Thomistic epistemology in his noetics and in his view of the origin of human knowledge. In relatively recent works, K. Flasch and B. Mojsisch have offered a challenging and stimulating interpretation of Dietrich's epistemological doctrines, emphasizing the modernity of his view on human mind: according to them, Dietrich regards it as an active consciousness and origin of the world<sup>343</sup>.

A detailed reading of his texts against the background of the doctrines of predecessors in the Dominican order may complete and slightly modify this picture of surprising modernity—scaling down, in particular, the alleged departure from the tradition of 13th-century cognitive psychology. It is well-known that Albert and Thomas assigned a crucial functional role to the agent intellect in the acquisition of knowledge. And, according to Flasch and Mojsisch, it is precisely Dietrich's doctrine of the agent intellect that shapes his novel epistemological views on the constitutive capacities of the

<sup>340</sup> Cf. § 2.4 of this chapter.

<sup>341</sup> Cf. *Quaestiones Parisienses*, ed. B. Geyer, in *Lateinische Werke*, Band V, q. 1. In q. 2, p. 50-51, Eckhart refers, however, to a species as "principium eius intelligere". As is well known, Eckhart's speculation is deeply influenced by Dietrich of Freiberg.

<sup>342</sup> Theodoricus Freibergensis, ca. 1250—after 1310; studied probably at the university of Paris, ca. 1276; 1293-96, Provincial of the Dominican Order in Germany; 1297-1303, read the *Sentences*, Paris.

<sup>343</sup> Cf. K. Flasch, "Kennt die mittelalterliche Philosophie die konstitutive Funktion des menschlichen Denkens? Eine Untersuchung zu Dietrich von Freiberg", in *Kant-Studien* 63(1972), 182-206; idem, "Einleitung", in Dietrich von Freiberg, *Schriften zur Intellekttheorie*, ed. B. Mojsisch, Hamburg 1977; idem, "Zum Ursprung der neuzeitlichen Philosophie", in *Philosophisches Jahrbuch* 85(1978), 1-18; B. Mojsisch, *Die Theorie des Intellekts bei Dietrich von Freiberg*, Hamburg 1977; idem, "Mittelalterliche Grundlagen der neuzeitlichen Erkenntnistheorie", in *Renovatio et Reformatio*, eds. M. Gerwing & G. Ruppert, Münster 1985, 155-169.



human intellect<sup>344</sup>. For this reason, I examine his noetics before turning to his species theory.

Dietrich characterizes the intellect as the constitutive principle of “res primae intentionis”<sup>345</sup>, thus advancing an extreme version of Averroes’ view of the agent intellect. Indeed, the “agere universalitatem in rebus” is replaced by “agit entitatem in rebus”<sup>346</sup>. More specifically, the intellect is viewed as producing things in their quidditative structure:

Unde, quamvis intellectus non constituat rem ipsam, nec faciat aliquid in re extra secundum hanc rationem, qua est ens naturae, secundum quam dependere habet a principiis naturae, constituit tamen hanc eandem rem secundum hanc rationem, qua est quid et habet esse quidditativum ex propriis sui generis principiis, ut homo ex animali et rationali, qui etiam praeter intellectum est ens naturae.<sup>347</sup>

The intellect, by virtue of its own nature, is directed towards “ea quae sunt”, that is, it has a causal relation with the “res”, although it cannot be causally affected by them<sup>348</sup>. This causal inefficacy of “res” conflicts with the fundamental cognitive role assigned by Aquinas to external reality and sensory representations. Dietrich’s departure from this Thomistic position is not so pronounced as was often suggested by scholars, however, although he clearly envisages an intellect ‘unmoved’ by external reality and ‘creating’ the cognitive object as such<sup>349</sup>. Indeed, he is manifestly influenced by

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<sup>344</sup> For discussion, see B. Mojsisch, “La psychologie d’Albert le Grand et la théorie de l’intellect de Dietrich de Freiberg. Essai de comparaison”, in *Archives de Philosophie* 43(1980), 675-93.

<sup>345</sup> *De origine rerum praedicamentaliū*, ed. F. Stegmüller, in *Archives d’histoire doctrinale et littéraire du Moyen Age* 32(1957), 115-201, on p. 124. On this question, see the study of K. Flasch, “Kennt die mittelalterliche Philosophie” and K. Hedwig, *Sphaera lucis*, 226: the mind is an “ens conceptuale”, i.e. it is the origin of the basic structure of the empirical world

<sup>346</sup> *De origine rerum praed.*, 130; cf. 173, 185 and 192-93. On this extreme version of Averroes’ thesis, see K. Flasch, “Kennt die mittelalterliche Philosophie”, 205.

<sup>347</sup> *De origine praed.*, 196

<sup>348</sup> *De origine praed.*, 178: “Habet etiam intellectus noster secundum se et secundum propriam naturam per se ordinem ad ea, quae sunt”; cf. 179: “Si igitur inter intellectum et huiusmodi sua obiecta attenditur aliqua causalitas, necesse est ipsam potius inveniri apud intellectum respectu rerum, quam e converso.”

<sup>349</sup> Cf. *De origine praed.*, 181. See also B. Mojsisch, “Sein als Bewußtsein. Die Bedeutung des ens conceptionale bei Dietrich von Freiberg”, in *Von Meister Dietrich zu Meister Eckhart*, ed. K. Flasch, Hamburg 1983, 95-105, who on p. 102 examines *De intellectu et intelligibili*, III.8.7 (in Dietrich von Freiberg, *Schriften zur Intellekttheorie*, ed. B. Mojsisch, Hamburg 1977), and concludes that the intellect constitutes, conceptually, natural things.

Aquinas when he claims that the “res” as *cognitive* “ens” is produced by first principles<sup>350</sup>.

The principal conflict with Thomas concerns the nativist flavor of Dietrich’s description—most likely inspired by his Proclean readings<sup>351</sup>—of the constitutive activity of the agent intellect. Dietrich claims that the agent intellect is a mediating entity between God and the possible intellect, thereby establishing a hierarchical relationship between these two intellects which has significant bearing on his theory of knowledge. Emanating directly from God, the agent intellect knows nothing external to its own structure<sup>352</sup>; the agent intellect knows itself and other things by virtue of its own essence, since it contains reality as “similitudo”<sup>353</sup>. The hierarchical

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<sup>350</sup> Cf. *De origine praed.*, 187. K. Flasch, “Kennt die mittelalterliche Philosophie”, states on p. 189 that Dietrich rejects the Thomistic distinction between extra- and intramental, as formulated for example by Thomas in *In XII libros Metaphysicorum*, V.9.889. According to Flasch, “Einleitung”, xiv-xv, Dietrich does no longer conceive of knowledge as a ‘copying’ of the external world and, thus, devalues the primacy of the external world. In short, Dietrich grounds the conformity reality-intellect in the intellect itself; cf. K. Flasch, “Kennt die mittelalterliche Philosophie”, 192. However, also in Thomas the first principles, which in a certain sense exist only in the human mind, guarantee this conformity. Furthermore, Thomas’ cognitive psychology does not imply any ‘copying’ of the external world. Flasch compares Dietrich with Kant—see, o.c., 198—but it would have been equally illuminating to identify the sources of his thought in (a radical version of) the doctrines of Albert and Thomas, without appealing to a (partially) arbitrary conflict between Dietrich and his predecessors. For the opposition against cognition as a ‘copying’ of reality, see also the positions of Ockham and Biel, discussed in ch. IV, § 3.1, and V, § 1.2.

<sup>351</sup> See, K. Flasch, “Einleitung”, xv-xvi; M.R. Pagnoni-Sturlese, “Filosofia della natura e filosofia dell’ intelletto in Teodorico di Freiberg e Bertoldo di Moosburg”, in *Von Meister Dietrich zu Meister Eckhart*, 115-127, on p. 123.

<sup>352</sup> *De visio beatifica*, p. 43: “Principium enim substantiae suae, a quo intellectualiter fluit, magis intimum est quam ipse talis intellectus sibi ipsi, et sic intelligendo suum principium non intelligit aliquid extra se, immo plus intra se quam in eo, quod intelligit suam essentiam”; cf. p. 44: “Et sic huiusmodi intellectus per essentiam semper in actu procedit a Deo quodam formali defluxu intellectus ex intellectu inquantum huiusmodi, id est ut tam intellectus procedens sua intellectione, qua intelligit suum principium, procedat ab ipso et ipsum tale principium sit intellectualiter principium a se procedenti, inquantum ab ipso intelligitur, id est inquantum in ipso est ratio intelligibilitatis, qua potest intelligi.” Cf. p. 54, where this conception is specified with the aid of the metaphor of “proles”; this biological metaphor for the production of knowledge is rooted in Augustine (cf. § 1) and will predominate during the later Scholasticism.

<sup>353</sup> *De visio beatifica*, in Dietrich von Freiberg, *Schriften zur Intellekttheorie*, ed. B. Mojsisch, Hamburg 1977, 22: Dietrich identifies here the agent intellect with the Augustinian *abditum mentis*; cf. also p. 28. See on this B. Mojsisch, *Die Theorie des Intellekts*, 46-47. A similar position is found in Olivi; according to Thomas only God possesses this kind of *similitudo*.

relationship between possible and agent intellect is not “static”, however: while the latter is actually “similitudo totius ens”, the possible intellect contains this similitudo on a potential level<sup>354</sup>. The dynamical interplay between the different layers of (mental) reality depends on the agent intellect, which “excedit in extra”<sup>355</sup>. This intellect, an intrinsic causal principle in the human soul, is a veritable cognitive engine<sup>356</sup> producing the possible intellect from within itself<sup>357</sup>. In turn, the possible intellect, which is unable to attain knowledge by virtue of its own essence, comes into ‘contact’ with, and cognitively grasps the sensible world with the indispensable mediation of species<sup>358</sup>.

Dietrich’s view on the origin of species is coherent with his noetics. All mental operations arise within the human soul<sup>359</sup> and therefore, since the agent intellect is its essential core, also the species issue from there. The human intellect acquires its ontological status in virtue of its own activity<sup>360</sup>. It does not receive anything, and develops its own means for establishing a relation with sensible reality. The contents of the possible intellect originate from the agent intellect, rather than from some sort of “conversio ad phantasmata”<sup>361</sup>, which is replaced by the projection of the agent intellect “in extra”. The first step of this projection is just the pro-

<sup>354</sup> *De intellectu et intelligibili*, p. 146; cf. p. 177; cf. *De visio beatifica*, 22.

<sup>355</sup> *De intellectu*, 143; cf. *De visio beatifica*, 31: the mind “excedit se ipsam”. Cf. for a somewhat similar position: Ramon Lullus, *Liber de intellectu*, eds. A. Llinarès & A.-J. Gondras, in *Archives d'histoire doctrinale et littéraire du Moyen Age* 38(1971), 193-270, on p. 215: “Et respondendum est quod intellectus transmittere potest extra se suam similitudinem per habitum scientiae intelligendo plures res, quas intelligibiles facit in suo proprio intelligibili”; and p. 240: the intellect as “causa sui ipsius”. For Lull’s views on abstraction and the mind’s innate conformity with the cognitive objects, see *De modo naturali intelligendi*, I-V, in Helmut Riedlinger (ed.), *Opera Latina*, vol. VI, Turnhout 1978, 191. Mind conceived of as projecting itself towards the inferior faculties and body is a central view in Simplicius and his Renaissance followers, such as Marcantonio Genua; see ch. VIII, § 1.

<sup>356</sup> *De intellectu*, 169; cf. 153-55; see Mojsisch, *Die Theorie des Intellekts*, 16, 19, and 53. Dietrich’s positions were immediately objected to; cf. M. Grabmann, *Mittelalterliche Deutung und Umbildung der aristotelischen Lehre vom NOUS POIETIKOS nach einer Zusammenstellung im Cod. B. III 22 der Universitätsbibliothek Basel*, Münster 1936, 100-102.

<sup>357</sup> *De intellectu*, 198; *De visio beatifica*, 116-17.

<sup>358</sup> *De visio beatifica*, 100-101; see 68-69, 72, 80-81.

<sup>359</sup> *De intellectu*, 148.

<sup>360</sup> *De intellectu*, 198; Flasch, “Einleitung”, xxi compares this position and Eckhart’s.

<sup>361</sup> *De intellectu*, 208; cf. Mojsisch, “Sein als Bewußtsein”, 102.

duction of intelligible species, connecting the possible intellect with the “cogitativa”:

Species etiam simplicium intentionum, quae sunt in apprehensione cogitativae, sunt immediatum subiectum secundum ultimam sui dispositionem, quae est necessitas, ut eis uniatur intellectuale nostrum quantum ad intellectum possibilem factum in actu per species intelligibiles. Et secundum hoc necessarium est in idem tendere intellectum possibilem quoad suam speciem intelligibilem et cogitativum quoad conceptas intentiones rerum, et ideo ex specie intelligibili et phantastico cogitativo fit unum tamquam compositum ex materia et forma, et ipse intellectus possibilis factus in actu quoad speciem intelligibilem fit forma cogitativi quoad suum phantasticum, secundum quod impossibile est sine phantasmate intelligere secundum Philosophum.<sup>362</sup>

In this passage, Dietrich explores the role of the intelligible species as an essential link in the formal hierarchy of the soul's powers. First, he establishes that the possible intellect and the “cogitativa”—that is, the supreme sensitive power—share the same domain of cognitive objects. Secondly, the possible intellect, insofar as it is actualized or informed by the intelligible species, may be regarded as the form of the “cogitativa”, since all sensory information is formally integrated by means of a mental representation or intelligible species. Thus, the Aristotelian dictum “non sine phantasmate” is attended to in virtue of intelligible species connecting noetic powers with the sensible soul. By the same token, integrating the intelligible species in the top-down production of noetic powers, Dietrich ensures that certain cognitive contents have an objective reference in the sensible world, and preserves the intrinsic coherence of human cognitive capabilities. The species play no role in knowledge arising from the agent intellect itself, nor in the beatitude unattainable by the possible intellect<sup>363</sup>. For attaining the em-

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<sup>362</sup> *De visio beatifica*, 115. See also *De intellectu*, 147-48: the active intellect engenders the intelligible form in the human soul. The possible intellect is not the *subiectum* of the intelligible species, see p. 187; cf. Albert's similar rejection in ch. II, § 2.1. See also P. Mazzarella, *Metafisica e gnoseologia nel pensiero di Teodorico di Vriberg*, Napoli 1967, 47 and 60. The question whether the intellect might be regarded as “subiectum” will play a pivotal role in early Renaissance controversies on intelligible species.

<sup>363</sup> *De intellectu*, 170; *De visio beatifica*, 105. See Hedwig, *Sphaera lucis*, 230.

pirical knowledge needed for living in this world, however, species and phantasms are indispensable<sup>364</sup>.

The relation between agent and possible intellect is no longer viewed in terms of the reception of abstracted species, because the agent intellect projects itself 'downwards' and 'outwards' only. In other words, even more pronouncedly than in Albert, the agent intellect is here the exclusive source of all intelligibility<sup>365</sup>. The relation between mind and world is analyzed in strictly metaphysical terms, and the problem of knowledge acquisition, coherently discussed within the framework of Neoplatonic emanation, is deprived of a more properly psychological significance.

Dietrich is a relatively isolated figure in the development of medieval psychology, in view of his uncompromising Neoplatonic conceptions grounding knowledge acquisition exclusively in the descending movement of the intellect. Similar doctrines will not emerge until the 15th century, with the works of Cusanus and Marsilio Ficino. Compared to the neo-Augustinian opposition against intelligible species, Dietrich's work qualifies as a significant step forward. The human intellect is no longer locked up inside itself, and plays the role of a productive center of cognition. This view ensures an explanation of the origin of human knowledge more convincing than the sterile occasionalism of, for example, Matthew of Aquasparta. The mind is not passively 'standing by' for accidental sensory stimulation merely occasioning the production of mental contents: cognitive states are in fact triggered by the mind's descending progression, actively projecting itself onto the external world and thereby producing mental contents.

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<sup>364</sup> *De intellectu*, 208. This doctrine of the species does not imply any projection of logical intentions in sensible reality, contrary to what Mazzarella, *Metafisica e gnoseologia*, suggests on p. 21. The species is a product of the agent intellect connecting our mind with sensible reality; that is the reason why phantasms are not idle entities; for a different opinion, see Mazzarella, *o.c.*, p. 66. I partially disagree also with Flasch, who in "Einleitung", xix, states that Dietrich overstresses the contrast between mind and body.

<sup>365</sup> See Mazzarella, *Metafisica e gnoseologia*, 59, 65, and 127.

## § 6. CONCLUSION

Augustine's *De Trinitate* integrates the Stoic doctrine of impressed sensible qualities and a Neoplatonically inspired spiritualistic psychology. Augustine postulates the existence of a chain of species originating in corporeal reality and reaching up to the mental level. He claims, however, that the impression of species is strictly confined to the level of the senses. One can reasonably maintain that Roger Bacon postulates intentional species for perceptual faculties only, conceiving them as quasi-mechanically impressed by the bodies through the medium. Thomas Aquinas introduced intelligible species as formal principles, mediating the intellectual soul with sensible reality. In his reflections on cognitive psychology, however, he does not mention impressed species. The intelligible species are abstracted from sensory images by the agent intellect, and enable the possible intellect to grasp their contents.

Franciscan authors and other post-Tempier theologians, active around the turn of the 13th and the 14th century, rarely made a precise distinction between the positions of Augustine, Roger, and Thomas. Many of them did not possess a sufficient historical perspective—necessary for understanding the terminological and doctrinal stratifications involved—and consequently objected to impressed species of any kind, no matter whether they pertained to the senses or the intellectual soul. Evidently, they did not realize that rejecting impressed species involved dismissing (part of) the psychological thought of their master Augustine as well.

Anxious about the immateriality and self-sufficiency of the human soul, many opponents of the species are unable to account for the objective reference of cognitive contents. Within the Franciscan order, this impasse will be overcome in the work of Duns Scotus and William of Ockham: they develop coherent alternatives—though mutually conflicting with respect to the intelligible species and many other issues—to the psychological theories of their predecessors.

The notion of intelligible species gave rise to fundamental misunderstandings. This was due chiefly to the pluricentennial influence that Peripatetic and Neoplatonic psychologies exercised on each other. In fact, the Peripatetic cognitive psychology of Arabic

commentators was strongly constrained by spiritualistic, Neoplatonic influences. For this same reason, it came to replace without real opposition the early medieval psychology leaning on Patristic sources in general, and on Augustine's way of reconciling Stoic and Neoplatonic psychological views in particular. Nonetheless, the 13th-century cognitive psychology *in statu nascendi* had to address unavoidable tensions between these paradigms. And the dispute on the intelligible species is a poignant example of such frictions. As long as the intelligible species is not conceived as impressed, there are no stringent reasons for rejection: no matter whether it is taken as innate or acquired, it can be identified with (the content of) cognitive acts. But an intelligible species somehow originating from sensory representations was often viewed as a serious threat to the immateriality of the intellectual soul and its immanent act.

Impressed intelligible species are not found in Thomas Aquinas' psychology. Species are not impressed on the possible intellect, which receives them as products of the agent intellect. But why are impressed intelligible species problematic? In addition to carrying undesirable physical connotations, the idea of impressed intelligible species presupposes some kind of *one-to-one* correspondence between sensory image and mental representation of cognitive content. To put it in a more modern jargon, the impression of intelligible species postulates *de facto* a type-type identity between the cognitive content and the sensory representational device embedded in physiological structures<sup>366</sup>. In other words, if one assumes the impression of mental representations, then the isomorphism between phantasm and intelligible species or cognitive content—which all Peripatetics seem to endorse—inevitably assumes a *real* character. And Thomas, I surmise, aimed only at a *structural* isomorphism between sense perception and intellectual cognition. His intelligible species is a sense-dependent product of the active feature of the human mind, rather than some sort of illuminated phantasm, and therefore grounds knowledge of universals. A chain of impressions may obtain through the various stages of the acquisition of sensory information. But also within these bounds, one has

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<sup>366</sup> Later authors—Thomas Wilton, Paul of Venice, and late schoolmen are cases in point—will coherently argue for impressed intelligible species representing an individual essence.

to take into account the substantive processing of stimuli transmitted by the external senses, resulting into perceptual representations by the inner senses. The production of the intelligible species transcends this level. The senses are affected by impinging sensory stimuli, while the possible intellect is actualized by the agent intellect which abstracts an intelligible species by 'sampling' sensory information. Therefore, interpreting in terms of impression the process of how cognitive representations arise belies the Thomistic account of the generation of mental acts.



## CHAPTER FOUR

### FOURTEENTH-CENTURY DEVELOPMENTS

The arguments of Henry of Ghent and others against intelligible species flared the responses of Dominicans and Franciscans in defence of formal mediation in (abstractive) cognition. In some cases, these responses brought about essential transformations of the original (Thomistic) theory. John Duns Scotus, for example,—though providing better arguments than Matthew of Aquasparta, Roger Marston, and other predecessors in the Franciscan order—applies the impression terminology of his opponents to the intelligible species<sup>1</sup>.

The early reception of Scotus' psychological views follows a rather peculiar path. François de Meyronnes, for example, uses more properly theological arguments for the necessity of mental representations; Peter of Aquila defends Scotistic orthodoxy against Henry and Godfrey, for example, and largely ignores Ockham's criticisms. Within the Dominican camp, the early Hervaeus Natalis defends the intelligible species as mediating principle, and expresses fundamental doubts at a later stage; Thomas Sutton—perhaps the major English spokesman of Thomism in his days—tends to identify intelligible species with cognitive acts as such. The works of these authors are analyzed in the first section.

After Scotus' death, the intelligible species remains a central issue in philosophical debates. The attacks of Durandus of Saint-Pourçain and John Baconthorpe are just a prologue to the powerful criticism given by Ockham, which is vigorously countered in the works of John of Reading, John Buridan and other authors. More radical positions in cognitive psychology are developed by French

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<sup>1</sup> Notice, however, that already his friar Bonaventure mentioned species impressed unto the intellect; cf. *In II Sent.*, d. 17, a. 1, q. 2, ad 4, p. 415: "Ideo anima non cognoscit rem, nisi speciem eius et formam sibi imprimat; et hoc non potest esse, nisi illa abstrahatur a materia."

authors such as Nicolas of Autrecourt and John of Mirecourt. These later developments are examined in sections 2 and 3.

Latin Averroism blossoms during the first decades of the 14th century, taking on the specific form that will remain for some centuries. The Averroistic school contributes significantly, chiefly through John of Jandun, to the intensified debate on intelligible species. Averroists badly need a doctrine of formal mediation in intellectual cognition. Representations produced by human perceptual and 'rational' capabilities are required because the unique Averroistic intellect—though having material reality as natural cognitive object—is incapable of directly grasping the sensible realm. Despite the temporal contiguity between the authors discussed in section 3 and (the forerunners of) Jandun and his first Italian disciples, relevant conceptual differences suggest the opportunity of a separate examination. The fourth section is devoted to Averroistic contributions. Walter Burley's contribution to the species debate, though not specifically Averroistic, is also analyzed there because, in addition to an undeniable affinity between Burley and Averroistic authors, his interpretation of a passage in Averroes' *Physics* commentary became an apple of discord during Renaissance disputes.

## § 1. NEW ARGUMENTS FOR INTELLIGIBLE SPECIES

### 1.1. *John Duns Scotus*

Duns Scotus<sup>2</sup> developed his doctrine of intelligible species in the context of his distinction between the two forms of *apprehensio*

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<sup>2</sup> Johannes Duns Scotus, ca. 1265—1308; may already have been studying theology at Oxford by 1288, and almost certainly by 1291; he lectured on the *Sentences* for the first time at Oxford in 1298-99; his second set of lectures on Lombard were delivered at Cambridge, perhaps in 1301-2, again at Paris in 1302-3, and possibly also at Cambridge in 1303-4; returned to Paris in 1304; probably became master in 1305; lectured as professor of theology at the Franciscan study house in Cologne from 1307 until his death. Duns' career was not long, but his impact upon later medieval thought was greater than that of masters like Henry of Ghent or Peter Olivi. For the chronology of his works, see Tachau, *Vision and Certitude*, 55-56, note 3. The philosophical climate of the early 14th century is analyzed in: S.J. Day, *Intuitive Cognition. A Key to the Significance of the Later Scholastics*, St. Bonaventure (N.Y.) 1947, 39f; G. Leff, *The Dissolution of the Medieval Outlook. An Essay on the Intellectual and Spiritual Changes in the Fourteenth Century*, New York 1976, 32f.

*simplex*<sup>3</sup>, that is, abstractive and intuitive knowledge. The species are required for the first type of knowledge only, for intuitive knowledge is achieved by an immediate grasp of the object as concretely existing<sup>4</sup>.

In Duns' epistemology, intuition of the singular has a complementary role with respect to abstractive knowledge, which is unable to guarantee that its objects actually exist. Intuition is supposed to counterbalance the limitations of abstractive knowledge. Although Duns is not explicit on this point, these limitations depend most likely on the mediation presupposed by the act of abstraction. More precisely, this mediation would prevent a 'direct contact' with the cognitive object. Some provisional conclusions can be drawn on the basis of this conjecture. In the first place, Duns endorses the species-doctrine in the version presented by its opponents, that is, he regards it as a naturalistic hypothesis about knowledge acquisition, presupposing an impression of mental representations by sensory faculties. This is also suggested by his selective discussion of opponents of intelligible species, which concentrates on Henry of Ghent, Peter Olivi, and Godfrey of Fontaines. Secondly,—and this is implicitly confirmed by the development of his theory of intuitive cognition—he grants that the opponents' concerns are fully legitimate.

Duns defends the species under the same conceptual interpretation adopted by its opponents, that is, as *species impressae*. He is thereby led into the rather difficult situation of defending a projection of the perspectivist theory of species in the intellectual realm<sup>5</sup>, rather than a well-defined doctrine of "species intelligibilis".

The accounts given by Duns and Thomas differ in essential respects, if only because Duns *defends* the doctrine of intelligible

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<sup>3</sup> For his theory of intuitive knowledge: Day, *Intuitive Cognition*, 67; Leff, *The Dissolution*, 60; R.A. te Velde, "Intuitieve kennis en contingentie bij Duns Scotus", in *Tijdschrift voor Filosofie* 47(1985), 276-295.

<sup>4</sup> Duns assigned a prominent role to intuitive knowledge also on the basis of theological considerations. One of the underlying motives was certainly the philosophical foundation of the beatific vision of Christ or God by the separate soul. If simple intellection were limited only to concepts abstracted from sense experience, then the face to face vision of God promised to man in the afterlife would be impossible. For background information, see C. Bérubé, *La connaissance de l'individuel au Moyen Age*, Montreal-Paris 1964; cf. also Tachau, *Vision and Certitude*, 68f.

<sup>5</sup> Cf. the previous chapter.

species (against Augustinian criticisms). In particular, the polemical background deeply affects his views, and induces him to address in more detail than Thomas many of the issues involved. Although Thomas is not mentioned in his defence of intelligible species, Duns accepts the Thomistic view of "species intelligibiles" as formal principles of knowledge. At the same time, he obviously thinks that the criticisms of Henry and others—concerning the naturalistic implications of the species doctrine and the alleged hiatus between human soul and cognitive object—deserve serious consideration. Indeed, Duns agrees that knowledge of physical objects founded on intelligible species is attained through an inferential process, not necessarily presupposing a 'direct contact' with them. Presumably, this belief is ultimately responsible for his doctrine of sensible and intellectual intuition.

Henry of Ghent is Scotus' main opponent on intelligible species. This appears from the arguments against intelligible species, mostly derived from Henry, that Scotus selects as point of departure for his discussion in *Ordinatio*<sup>6</sup>: (i) the species as a singular entity cannot represent the universal<sup>7</sup>; (ii) the species is unnecessary when the object is present<sup>8</sup>; (iii) an intellect possessing various intelligible species would simultaneously know more than one object<sup>9</sup>; (iv) the intellect must be affected by the intelligible object, rather than by the species, for otherwise intellection is no longer "motus rei ad animam"<sup>10</sup>.

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<sup>6</sup> See *Ordinatio*, in *Opera omnia*, ed. C. Balic e.a., vol. III, Città del Vaticano 1954, liber I, dist. 3, q. 1, 202-204. The intelligible species was also defended in the *De anima* commentary, which was published during the 17th century in Scotus' *Opera*, tomus secundus, Lyon 1639, 477-662. There is no conclusive evidence that this work is authentic, but it represents faithfully Duns' thought. This commentary did not influence, however, the species-debate in the same measure as his *Ordinatio* did. On the authenticity of this commentary, see also K.H. Tachau, "The problem of the *species in medio* at Oxford in the generation after Ockham", in *Mediaeval Studies* 44(1982), 394-443, on p. 431, note 127.

<sup>7</sup> *Ordinatio*, I, dist. 3, q. 1, 202; cf. Henry's *Quodlibetum* V, q. 14, 174f, discussed in the preceding chapter.

<sup>8</sup> *Ordinatio*, I.c., 202.

<sup>9</sup> *Ordinatio*, I.c., 202-203; this argument is not derived from Henry; Duns quotes Algazel's *Metaphysics*. On this work, see ch. I, § 3.2.

<sup>10</sup> This claim presupposes that the mental act is, in a certain sense, the result of (external) motion, and thus gives credit to the perspectivist species doctrine also in the domain of intellectual abstraction. Cf. *Ordinatio*, I.c., 203; also this argument is not

Two ancillary arguments complete Duns' list: (v) the "conversio ad phantasma" is superseded by the intelligible species, and (vi) the intellect, like the will, does not receive anything from the object<sup>11</sup>.

Scotus advances two related arguments for the necessity of species in intellective cognition: (1) species present cognitive contents in a strict sense; and (2) knowledge of the universal can be attained only through species. The focal point of the first argument is the view that sensible things, in their concrete existence, are not 'proportionate' to the immaterial intellectual act, and must be differently 'presented' to the human mind.

Intellectus quandoque est in potentia propinqua et accidentali ad intelligendum, qui prius fuit in potentia essentiali et remota. Istud non est in intellectu nisi per aliquam mutationem: sed non obiecti, patet; ergo ipsius intellectus. Ista mutatio, quae fit ad talem potentiam propinquam, videtur esse ad aliquam formam, per quam obiectum intelligibile est praesens intellectui,—quae forma est prior actu intelligendi, quia prior naturaliter est potentia propinqua, qua quis est potens intelligere, quam actus intelligendi; illa forma, per quam obiectum est sic praesens, vocatur 'species'; ergo etc.<sup>12</sup>

The human mind cannot be actualized by its *material* object and thus, for an adequate grasping of sensible essences, material objects must be properly represented by and to the mind. Evidently, the form representing an object and the apprehended (cognitive) content are not characterized by means of the same properties, for otherwise an infinite regress is inevitable. Indeed, the specific features of the species—representing the form to be known—depend essentially on its role in the hierarchically organized process making available potential cognitive contents at a level transcending the "hic & nunc" of the sensible realm. This crucial role of the species

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derived from Henry of Ghent. The editor quotes Aristotle, *Metaphysics* XII, 1072a30, which is about mind as moved by its object (*noeton*) and *De anima*, 429a13-15, but it is more likely that Duns read the definition of intellection as "motus rei ad animam" in Godfrey of Fontaines, *Quodlibet* IX, q. 19, ed. cit., 272: "Sed non est ita in proposito, quia ipse actus intelligendi non est actus transiens ab intellectu in obiectum, sed potius e converso; est enim intelligere motus rei ad animam." See already the *Summa halensis*, tomus II, 454: "Intellectus enim possibilis est ad quem terminatur motus qui est ad animam." The argument will return in Peter of Aquila and Thomas of Strasbourg; see below subsection 2 and § 3.4.

<sup>11</sup> *Ordinatio*, l.c., 204. Cf. this point with Olivi's concern that an argument establishing the passive character of cognition, would by extension demonstrate the passive character of the will; see ch. III, § 3.4.

<sup>12</sup> *Ordinatio*, l.c., 204-205.

in the transition from perception to cognition is more extensively discussed below<sup>13</sup>.

After surveying the positions of Henry and Godfrey<sup>14</sup>, Duns works out his second main argument for the intelligible species, based on necessary conditions for attaining knowledge of the universal. In particular, this form of knowledge presupposes that our mind possesses "prius" an adequate representation of the universal:

Ex hoc ergo manifesto, scilicet quod intellectus potest intelligere universale, accipio hanc propositionem: 'intellectus potest habere obiectum actu universale, per sibi praesens in ratione obiecti, prius naturaliter quam intelligat'. Ex hoc sequitur propositum, quod in illo priore habet obiectum praesens in specie intelligibili, et ita habet speciem intelligibilem priorem actu.<sup>15</sup>

Knowing an object is possible only if the object is represented in a form accessible to the intellectual soul. Thus, in order to apprehend a universal content, the human intellect needs an intelligible species representing the universal, and consequently preceding the intellectual act of grasping that universal<sup>16</sup>. This second argument for the species makes crucial appeal to Duns' understanding of the notion of universality, that I turn to examine now.

In a critical discussion of Henry of Ghent's illuminated phantasms, Duns claims that the phantasm represents only singular aspects of sensible reality, since no representation can simultaneously express more than one aspect of the represented object<sup>17</sup>. Moreover, without a "terminus realis," the agent intellect cannot undertake any "actio realis". The phantasm, however, is not a "terminus realis," and the agent intellect cannot cause anything 'in' the phantasms,

<sup>13</sup> In particular, Duns' interpretation of Averroes' "de ordine ad ordinem" is intended here.

<sup>14</sup> *Ordinatio*, l.c., 205-209. Also in this section, Duns continues the discussion of Henry's *Quodlibetum* V, q. 14 and Godfrey's *Quodlibetum* IX, q. 19; cf. the notes of the editors of the *Ordinatio*.

<sup>15</sup> *Ordinatio*, l.c., 210.

<sup>16</sup> See also Gilson, *Jean Duns Scot*, 535f on the intellect's object.

<sup>17</sup> *Ordinatio*, l.c., 215-216; cf. 215: "Secundo ad illam viam primam arguo sic, quia repraesentativum secundum totam virtutem suam repraesentans aliquid sub una ratione, non potest simul repraesentare idem vel aliud sub alia ratione obiecti".

since its function is that of “transferre de ordine ad ordinem”<sup>18</sup>. The agent intellect, Duns states, must bring forth cognitive principles adequately representing the universal nature<sup>19</sup>.

Rather than merely unveiling them, the intellect actually produces universals in its interactions with sensory representations. The active role of the intellect and the related generation of intelligible species mark the transition from the order of sense perception, concerning singular features of reality, to the intellectual grasp of the universal nature of the sensible realm. The universal—not to be found as such in extra-mental reality—can be grasped by the intellect when it is appropriately represented<sup>20</sup>. This fundamental point enables Duns to connect his two main arguments for intelligible species when he examines the “rationes ex parte praesentiae objecti”.

With undeniable irony, Duns insists against Henry that the object is not sufficiently present to the intellect, if the latter has to ‘beg’ the object from the phantasy<sup>21</sup>. By claiming that intelligible species are needed to ensure the universality of intellectual knowledge, Duns emphasizes their function as appropriate representations of

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<sup>18</sup> *Ordinatio*, 216-17; cf. Averroes, *In De anima*, III, co. 18, ed. cit., 439. According to Duns, Godfrey imposes a complete inactivity on the agent intellect, as formulated in *Quodlibet* V, q. 10, 36-38; cf. ch. III, § 3.3.

<sup>19</sup> *Ordinatio*, 217-218, cf. p. 218: “Et confirmatur ratio, quia ponitur intellectum agentem facere ‘de non-universali universale’ vel ‘de intellecto in potentia intellectum in actu’, sicut dicunt auctoritates Philosophi et Commentatoris. Cum universale ut universale, nihil sit in existentia, sed tantum sit in aliquo ut repraesentante ipsum sub tali ratione, ista verba nullum intellectum habebunt, nisi quia intellectus agens facit aliquid repraesentativum universalis de eo quod fuit repraesentativum singularis, quantumcumque illud ‘de’ intelligatur, materialiter vel virtualiter; actio realis non terminatur nisi ad repraesentativum obiecti sub ratione universalis; ergo realis actio intellectus agentis terminatur ad formam aliquam realem, in existentia, quae formaliter repraesentat universale ut universale, quia aliter non posset terminari actio eius ad universale sub ratione universalis.”

<sup>20</sup> *Ordinatio*, 218-19.

<sup>21</sup> *Ordinatio*, 224-225: “Si obicias ‘pluralitas non est ponenda nisi ubi est necessitas, hic non est necessitas, ergo etc.’,—respondeo: necessitas est quando perfectio naturae hoc requirit. Licet autem hoc suppositum quod est homo, possit habere obiectum praesens in phantasmate, quia homo est, tamen natura intellectualis hominis, ut intellectualis est, non habet obiectum sufficienter praesens si non habet ipsum nisi in praesentia mendicata a virtute phantastica. Hoc ergo multum vilificat naturam intellectivam ut intellectiva est, quia removetur ab ea illud quod est perfectionis in potentia cognitiva, et quod invenitur in potentia sensitiva, ut in virtute phantastica.” For discussion, see also Tachau, *Vision and Certitude*, 60-61.

this universality, that is, their presenting the object as knowable<sup>22</sup>. In fact, the intellect can undertake other intellectual activities, such as judgment and discursive reasoning, only when it has been actualized by intelligible species<sup>23</sup>. Finally, Duns examines arguments derived from authorities: he mentions Aristotle and Averroes<sup>24</sup>, and insists on amending Henry of Ghent's interpretation of Augustine, with the evident intention of widening the gulf between this father of the church and the opposition to the species<sup>25</sup>.

In his last reply to various objections against the species, Duns presents his views and arguments more precisely, successfully integrating elements of the "impressio" doctrine with the thesis that the agent intellect effectively contributes to the origin of the intelligible species. Duns builds up towards this integration by distinguishing between the singularity of the object, conceived as "condicio agentis", and the form present in every singular thing, characterized as "ratio agendi"<sup>26</sup>. It is in virtue of their formal features that sensible things contribute to producing mental representations. Therefore, the intelligible species can be viewed as jointly resulting from the interaction of the singular object—as represented by the phantasm—and the agent intellect<sup>27</sup>. The specific contribution of the object may even be described in terms of an *impressio speciei*, provided that this impression is interpreted as a necessary condition for generating knowledge in the possible intellect<sup>28</sup>.

<sup>22</sup> *Ordinatio*, l.c., 225.

<sup>23</sup> *Ordinatio* I, dist. 3, pars 3, q. 2, 271-72. For the different types of thought in Aristotle, see ch. I, § 1.3.

<sup>24</sup> *Ordinatio*, idem, q. 1, 226f; it is remarkable that Duns interprets the "scientia" in *Physics* VIII, "commento 30 secundum Commentatorem", (= c. 4, 255a33-255b5), as a "species intelligibilis".

<sup>25</sup> See *Ordinatio*, 228-30, and 239-40 where he rejects Henry's interpretation of Augustine's idea of the presence of science in memory which, according to Henry, would make intelligible species superfluous.

<sup>26</sup> *Ordinatio*, 231.

<sup>27</sup> *Ordinatio*, 231-32; cf. q. 2, 289f and p. 333. As is well known, just like Thomas, Duns assigns to the phantasm an instrumental causal role, and to the agent intellect the principal causal role in the production of the species. Cf. Thomas, *De veritate*, q. 10, a. 6, ad 7; quoted in ch. II, § 3.6.

<sup>28</sup> *Ordinatio*, 232-33: "Ad secundum, de praesentia, respondeo quod obiectum respectu potentiae primo habet praesentiam realem, videlicet approximationem talem ut possit gignere talem speciem in intellectu, quae est ratio formalis intellectionis; secundo, per illam speciem genitam, quae est imago gignentis, est obiectum praesens sub ratione cognoscibilis seu repraesentati. Prima praesentia praecedat naturaliter secundam, quia praecedat impressionem speciei per quam est formaliter secunda prae-



These developments are only *prima facie* surprising, for Duns is compelled to accept some sort of impression in order to justify his view of intellection as a “*motus rei ad animam*”<sup>29</sup>. Against Henry, he emphasizes that this impression is a strictly cognitive (as opposed to organic) process<sup>30</sup>. Furthermore, Henry fails to distinguish between the first and second act of the intellect when he replaces the intelligible species with a habit<sup>31</sup>.

Just like Thomas, Duns assigns a real, non-phantasmic causal role to sensible objects and their sensory representations in the generation of intellectual knowledge. His criticisms of Olivi, in fact, stem from this basic conviction<sup>32</sup>: the intellect and the sensible object belong to different orders, and their causal roles in the cognitive process should not be confused<sup>33</sup>. Nonetheless, between intellect and object as represented by the intelligible species there is an essential “*ordo*”, sufficient to guarantee a combined effect<sup>34</sup>. Duns may have derived this view from Giles of Rome’s doctrine of “*radicatio*” or from Vital du Four’s views on the relation between per-

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sentia. (...) Et intelligo sic, quod in primo signo naturae est obiectum in se vel in phantasmate praesens intellectui agenti, in secundo signo naturae—in quo ista sunt praesentia intellectui possibili, ut agentia passo—gignitur species in intellectu possibili, et tunc per speciem est obiectum praesens sub ratione cognoscibilis.” See also Giles of Rome’s position formulated in his commentary on the second book of the *Sentences* (finished not before 1309): *In II Sent.*, l.c., 259a: “(...) quod phantasmata in virtute intellectus agentis imprimunt species intelligibiles in intellectu possibili, (...)”.

<sup>29</sup> *Ordinatio*, 235: “Ad quantum dico quod intellectus non tantum patitur realiter ab obiecto reali, imprimente talem speciem realem, sed etiam ab illo obiecto ut relucet in specie patitur passione intentionali: et illa secunda passio est ‘receptio intellectionis’—quae est ab intelligibili in quantum intelligibile, relucens in specie intelligibili—et illud ‘pati’ est ‘intelligere’, sicut patebit in quaestione proxima. Cum ultra deducis quod intellectio ‘non est motus rei ad animam’, non sequitur, quia impressio speciei est quidam motus rei ad animam, quatenus res habet ‘esse’ in illa specie; intellectio etiam sequens impressam speciem, est motus rei ad animam, quatenus per intellectionem obiectum habet ‘esse’ in anima actualiter cognitum, quod prius tantum habuit ‘esse’ habitualiter.”

<sup>30</sup> *Ordinatio*, 236-237; see also p. 237-8. Notice that Peter of Spain accepted the impression of species on this condition; cf. *Comentario al “De anima”*, 391 and ch. II, § 1.5.

<sup>31</sup> *Ordinatio*, 240-242; cf. Tachau, *Vision and Certitude*, 57, 60-61 for discussion of the knowledge of angels and the theological aspects of criticisms against the habitus doctrine in Henry; cf. *idem*, 32, note 16.

<sup>32</sup> See *Ordinatio*, I, dist. 3, q. 2, 247f.

<sup>33</sup> *Ordinatio*, l.c., 293f.

<sup>34</sup> Cf. *Ordinatio*, l.c., 294: “Concurrunt ergo ista duo ut habentia ordinem essentialem.” See also pp. 297-98.

ceptual and intellectual capabilities<sup>35</sup>. On the other hand, it may also be an original rephrasing of Thomas' idea of a general participation of being.

The causal powers of the agent intellect transcend those of the sensible object in the production of the intelligible species; similarly, the possible intellect influences the production of mental acts more than the intelligible species. In fact, an object can be present to the soul in various degrees, the lower one being the phantasm<sup>36</sup>. Only by virtue of the intelligible species is the intellect capable of assimilating the formal structure of the sensible object; this does not mean that the species is the *ratio totalis* of our intellection, however<sup>37</sup>.

Two points are central to Duns's treatment of species. Firstly, in addition to defending the functionality of mental representations, Duns, unlike Thomas Aquinas, emphasizes the (chrono-)logical priority of the intelligible species with respect to the causally related cognitive act. And, secondly, Duns by this move divides cognition into segments, the mutual coherence of which is postulated rather than systematically grounded.

Duns regards abstractive cognition as (the result of) a complex process, and therefore posits logical and chronological priority relationships between the various subprocesses. However, the various distinctions needed to ensure a continuity between different stages of abstractive knowledge—in particular, the very distinction between a first act (grounded upon the species) and a second act (identified with intellection)—spoil the unity of abstractive cognition. And Duns' claim that the first and second act immediately de-

<sup>35</sup> Cf. ch. III, § 2.3 and 4.4.

<sup>36</sup> Cf. *Ordinatio*, 315: "(...) ad agendum requiritur ratio formalis agendi et ratio agentis; 'agens' est suppositum, 'ratio agendi' est forma elicitiva actionis. In prima ergo actione in intellectum possibilem 'agens' est phantasma, sed 'quod quid est'—splendens in phantasmatē—est ratio agendi, et hoc in quantum illud 'quod quid' stat in lumine intellectus agentis et penetratur ab ipso lumine et ambitur ab isto agente."

<sup>37</sup> *Ordinatio*, 325: "(...) bene concedo quod species illa quae est similitudo obiecti, et per quam intellectus assimilatur cognitioni productae, est aliqua ratio gignendi, sed non totalis ratio, nec etiam principalis, sicut patebit in sequenti quaestione: sed quando concurrunt duae causae, sufficit in propinquiore similitudo formalis, et in remotiore virtualis sive similitudo aequivoca,—et ita intellectus, quasi causa superior, virtualiter assimilatur intellectioni, species, quasi causa propinquior, quasi univoce et formaliter assimilatur rei." See *idem*, 333f.

pend upon the intellect<sup>38</sup> does not meet the objection that the production of the intelligible species (by the phantasm and the agent intellect) and the production of the cognitive act (by intelligible species and possible intellect) are *consecutive* temporal events<sup>39</sup>. The distinction between the first and second act counters many objections of earlier opponents, but the emphasis on the species as *prior*, and thus as preceding the mental act<sup>40</sup>—inevitable if the species presenting the object to the intellect is viewed as impressed—jeopardizes the intrinsic coherence of the intellectual act. In other words, the logical priority of species suggests a problematic chronological priority too.

Duns does not hold that the species is the first known, but he seems to share the view that the species is a veil between the soul and the world. He thinks that perception and knowledge based on species are complex procedures, since they presuppose the occurrence of an intermediary principle present to the mind. And indeed, if this presence is prior to the effective apprehension of cognitive objects, cognition inevitably involves some inference from intermediary representations or entities, and lacks *de facto* all (direct) contact with the world.

### 1.2. François de Meyronnes and Peter of Aquila

Unlike Duns Scotus, François de Meyronnes, one of his first disciples<sup>41</sup>, defends intelligible species mostly on the basis of theolog-

<sup>38</sup> *Ordinatio*, dist. 3, q. 1, 243: "Nec tamen intelligo ita istos actus esse ordinatos quod prior sit ratio receptiva respectu posterioris, sicut scilicet superficies est ratio recipiendi albedinem: tunc enim intellectus respectu nullius 'intelligibilis' recipere posset actum secundum (qui est intellectio), nisi prius haberet actum primum (ut speciem eiusdem obiecti); sed intelligo quod intellectus de se est ratio immediata recipiendi utrumque actum." Day, *Intuitive Cognition*, 130: abstracting is an active operating, not a passive undergoing.

<sup>39</sup> Thomas, for instance, attempted to avoid a temporal segmentation of the mental act by stressing the coincidence of abstraction and reception of species. Thomas characterized the intellect's first and second act as "scientia" and "consideratio", respectively; cf. *Summa contra Gentiles*, I, c. 45, 385. The distinction between reception of species and intellection will be discussed also by adversaries of the species doctrine; cf; Peter Aureol, *In II Sent.*, 750a.

<sup>40</sup> *Ordinatio*, 237: "Tale impressum repraesentans, praecedens in potentia intellectiva actum intelligendi, voco 'speciem intelligibilem'."

<sup>41</sup> Franciscus de Mayronis, died 1328; arrives in Paris between 1302-1307; it is not sure that he followed Scotus' lectures; doctor theologiae in 1323. For discussions of his epistemological views, see Tachau, *Vision and Certitude*, 327-332.

ical arguments. In his commentary on the *Sentences*<sup>42</sup>, he asks whether intelligible species are necessary with respect to four senses of the word “species”, a distinction he attributes to Augustine<sup>43</sup>. This is a clear indication of how, by that time, Augustine had become definitively involved in the dispute. François proceeds to sketch out three different positions, corresponding essentially to the views of Godfrey, Henry of Ghent, and Scotus. Finally, he presents his own views, starting with an argument “ex creditis”: if the separate soul receives species, then the embodied soul must receive them too. The premise of this conditional is argued for on the basis of the following claims: (1) the “notitia vespertina”<sup>44</sup> of the separate soul concerns unintuitable objects which can be grasped only by abstraction; and (2) the separate soul is capable of recalling absent things. The second claim, which unlike the first is qualified as ‘necessary’, is overtly theological in character, at least for the modern reader, since it presumes that the separate soul is capable of remembering things without phantasms. And indeed, to support this claim, François refers to St. Paul’s experience of remembering what happened after his *raptus* on the way to Damascus. The possibility of recalling such an experience can be explained only by postulating intelligible species, that is, representations that are largely sense-independent. The fact that these species take their origin in an extra-ordinary form of (sense) perception is not seen as a serious problem by François.

Two additional arguments, against authors suggesting that the species can be fully replaced with an intellectual habit, proceed along similar lines. These arguments are supposed to justify the following claims: (3) any habit whatsoever is formed by species, and, (4) memory of mental acts seems impossible without species *in a habitus*.

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<sup>42</sup> *Preclarissima ac multum subtilia egregiaque scripta (...) in quatuor libros Sententiarum*, Venetiis 1520. In François de Meyronnes-Pierre Roger, *Disputatio*, ed. J. Barbet, préface Paul Vignaux, Paris 1961, the issue of intelligible species is not touched on.

<sup>43</sup> *In quatuor libros Sententiarum*, I, dist. 3, q. 10, 27va. See also ch. III, § 1 for Henry’s classification and ch. III, § 3.2.

<sup>44</sup> Thomas introduces knowledge “per speciem” in his discussion of Augustine’s distinction between the angel’s “cognitio matutina” and “cognitio vespertina”; see *In II Sent.*, dist. 12, q. 1, a. 3 and the contemporary *Quodlibetum IX*, q. 4, a. 2.

The solutions envisaged by François to the various problems raised in discussing points (1)-(4) are clearly drawn from Duns Scotus' view on intelligible species, and reveal the apologetic purpose of his plea for intelligible species<sup>45</sup>. Quite remarkably, despite the fact that François writes more than fifty years after the species has become a standard topic in the comments on the *Sentences*, the theological orientation of his arguments still alludes to a fundamental aspect of the original context in which Thomas' theory developed, namely, the doctrine of angels.

Peter of Aquila, another early follower of Duns Scotus<sup>46</sup>, addresses the issue of intelligible species in a discussion on the nature of memory. He asks whether a memory containing intelligible species is available to the human intellect<sup>47</sup>; he points out that several opinions have been formulated, and undertakes to analyze the views of Henry of Ghent, Godfrey of Fontaines, and Scotus. The reader's curiosity is kindled by the announcement that the true opinion on this issue will be disclosed in the final part of the section devoted to species.

Peter gives a synthetic list of points on the basis of which Henry and Godfrey discard the view that species persist in the intellect after the cognitive act: (1) the species can represent only singular aspects of the cognitive object, and therefore cannot ground knowledge of universals; (2) the principle of parsimony ("nulla pluralitas sine necessitate"); (3) the simultaneous intellectual apprehension of more than one object would be impossible<sup>48</sup>; (4) if the species is an "accidens inherens", then the act of cognition is a real "passio", and

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<sup>45</sup> *In quatuor libros Sententiarum*, l.c., 27vb-28rb.

<sup>46</sup> Petrus de Aquila, died 1361, fl. in the 1340's; this Franciscan theologian probably read the *Sentences* in 1333-35. Like François de Meyronnes, Aquila leans heavily on Henry of Ghent; see C. Bérubé, "La première école scotiste", in *Logique, ontologie et théologie au XIV siècle. Preuve et raisons à l'université de Paris*, eds. Z. Kaluza & P. Vignaux, Paris 1984, 9-24, on p. 23.

<sup>47</sup> Petrus de Aquila, *Quaestiones in IV libros Sententiarum*, Speyer 1480, Liber I, dist. 3, q. 4 (unnumbered files). Duns Scotus already argued against Henry that the soul would have no intellectual memory, if it were devoid of intelligible species; see *Ordinatio*, I, dist. 3, p. 3, q. 1, 225, 230, 240-41.

<sup>48</sup> This argument is somewhat surprising, because in an Aristotelian frame the simple apprehension never regards more than one individual essence. This doctrine is also endorsed by most adversaries of the species theory.

cannot be characterized as a “*motus rei ad animam*”<sup>49</sup>; (5) the intellect is not an organic power, and therefore its receptivity cannot be compared with that of the senses; (6) the potentiality of the intellect, as Godfrey observed, regards exclusively intellectual knowledge, rather than any preceding species.

Duns Scotus’ view of intelligible species is schematically presented in five points<sup>50</sup>: (1) the human mind does not attain knowledge of universals unless they are presented to it in a knowable manner; (2) a representational device may represent something only “*sub una ratione*”, and thus the phantasm cannot represent the quidditative essence as universal; (3) the operation of the agent intellect must be real, and its effect too; (4) what is less universal cannot represent what is more universal; (5) the distinction between senses and intellect bears significant consequences at the representational level.

Although Peter agrees with Scotus’ view, he distinguishes it from the ‘true’ opinion, according to which intelligible species are necessary for the following reasons: (i) knowledge of universals is made possible, (ii) the eminence of superior cognitive faculties is ensured; (iii) Augustine’s authority, as shown in *De Trinitate* XIV, supports intelligible species<sup>51</sup>; (iv) the distinction between intuitive and abstractive knowledge necessarily presupposes that the latter is based on species, since the former does not require any preceding species.

Aquila’s discussion of Scotus’ ideas on intelligible species does not contain a reaction to Ockham’s criticism, although his text was most likely written during Ockham’s scholarly activity. His defence of the scotistic species theory chiefly addresses the arguments of Scotus’ interlocutors, such as Henry of Ghent and Godfrey of

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<sup>49</sup> As I noticed above (subsection 1), this argument is discussed by Duns. His source for the definition of intellection as “*motus rei ad animam*” was most likely Godfrey of Fontaines, *Quodlibet* IX, q. 19, ed. cit., 272: “*Sed non est ita in proposito, quia ipse actus intelligendi non est actus transiens ab intellectu in obiectum, sed potius e converso; est enim intelligere motus rei ad animam.*” But see also the earlier *Summa halensis*, tomus II, 454: “*Intellectus enim possibilis est ad quem terminatur motus qui est ad animam.*”

<sup>50</sup> For a more extensive discussion of Duns’ argument, see above, subsection 1.

<sup>51</sup> See also ch. III, § 1.

Fontaines<sup>52</sup>. Aquila's commentary on the *Sentences* is often only a compilation from Scotus' texts, and his discussion of intelligible species is rather conventional. Nevertheless, his work provides useful information on the species debate, for it shows that Ockham's attacks were completely ignored by some of the participants<sup>53</sup>.

### 1.3. Hervaeus Natalis

Hervaeus Natalis was one of the most representative theologians in the Dominican order at the turn of the thirteenth century<sup>54</sup>. The list of his writings indicates that he addressed all of the important issues that were raised in early controversies on Thomism. Initially, he defended the doctrine of the intelligible species against Henry of Ghent. Unlike his younger contemporary Scotus, Hervaeus leaned heavily on Aquinas in his early works, and defended the necessity of species mainly by appealing to authoritative opinions, rather than using independent arguments<sup>55</sup>. Also in *De verbo* and in the commentary on the *Sentences*, he conformed to a "communis opinio" of the early Thomistic school<sup>56</sup>. Subsequently, in his *Quolibeta*, Her-

<sup>52</sup> See in this context also *Quaestiones in IV libros Sententiarum*, Liber II, dist. 3, q. 2, on angelic knowledge.

<sup>53</sup> Among the first followers of Scotus are William of Alnwick (died 1333), author of *Quaestiones disputatae de esse intelligibili et de quolibet*, ed. A. Ledoux, Quaracchi 1937, and John of Ripa, fl. in the 40's and 50's of the 14th century; for discussion of the latter, see below, § 3.5.

<sup>54</sup> Hervaeus Natalis, O.P., ca. 1250/60—1323; 1276, enters the Order; 1302, reads the *Sentences*; 1307, incepted; 1301-1307, polemizes with Henry of Ghent; 1307, defends Thomas against Scotus; 1307-10, writes four major *Quodlibets*; 1308-1314, polemics with Durandus, Godfrey, and Aureol; 1318, elected Master General. For biographical information, see A. Guimarães, "Hervé Noël (†1323): étude biographique", in *Archivum Fratrum Praedicatorum* 8(1938), 5-81; Roensch, *Early Thomistic School*, 106-117.

<sup>55</sup> Cf. P. Stella, "La prima critica di Hervaeus Natalis O.P. alla noetica di Enrico di Gand: il *De intellectu et specie* del cosiddetto *De quatuor materiis*", in *Salesianum* 21(1959), 125-170, on p. 136. In fact, the texts of the *De quatuor materiis* (1304-07) are not autonomous treatises, but "reprobationes" of Henry's positions.

<sup>56</sup> See *De verbo*, in *Tractatus VIII*, Venetiis 1513, 10rb-24rb, on f. 10rb-11ra. Hervaeus examines "species intelligibiles" also in *In II Sententiarum*, dist. 3, q. 4, a. 2-4; dist. 17, q. 2, a. 1-3; for discussion, see *infra*. In his *Defensa doctrinae D. Thomae*, regarding principally the scientific character of theology, the species is not considered; see E. Krebs, *Theologie und Wissenschaft. An der Hand der Defensa doctrinae D. Thomae des Hervaeus Natalis*, Münster 1912.

vaeus advanced serious doubts on intelligible species, which eventually led him to reject the species altogether<sup>57</sup>.

In *De intellectu et specie*, Hervaeus contends that Henry's view of intelligible species is inconsistent<sup>58</sup>. He argues that Henry's objections against impressed intelligible species are not convincing, since Henry accepts that the intellectual act is produced by agent intellect and phantasm<sup>59</sup>. Moreover, he claims that the individual character of mental representations does not prevent their referring to universal natures. Reflecting on Thomas' double consideration of species—that is, as being singular entities representing universal natures—Hervaeus specifies that the intelligible species is not individualized upon reception by an immaterial entity such as the possible intellect, in the same way as a singular form by matter. For this very reason, the species is suitable for representing the universal<sup>60</sup>.

Unlike Aquinas, Hervaeus maintains that the species is a non-formal and yet effective principle of the intellectual act<sup>61</sup>. Thus, the species actually starts or induces the cognitive process. In the doctrinal background of this view is the conviction, shared by Godfrey and Duns, that intellection must be understood in terms of a “*motus rei ad animam*”<sup>62</sup>. As a consequence, the species has a strong impact

<sup>57</sup> See *Quodlibetum* II, q. 8, in *Quodlibeta*, Venetiis 1513 and in particular *Quodlibetum* III, q. 8; see *infra*.

<sup>58</sup> This “reprobatio” regards Henry's *Quodlibeta* V, q. 14 and IV, q. 21, both analyzing the issue in the context of angelic knowledge. One has to recall that the former *Quodlibet* was Henry's reply to Giles' criticisms to *Quodlibetum* IV, q. 21, formulated in *Quaestiones de cognitione angelorum*.

<sup>59</sup> *De intellectu et specie*, 167.

<sup>60</sup> *De intellectu et specie*, 152: “Causa autem quare talis species, cum causetur a natura sensibili singulari repraesentata in phantasmate, non singulariter, loquendo directe, sed universaliter repraesentetur, est quia, cum sit in natura immateriali sicut in subiecto, non habet consimilem individuationem sicut natura sensibilis quam repraesentat, quae habet individuari per materiam extensam (...)”; see also p. 167.

<sup>61</sup> Cf. *De intellectu et specie*, 143-44: “Quantum vero ad causalitatem, sciendum quod species illa non est causa formalis actus intelligendi; nec est illud quo formaliter intelligens est intelligens; licet sit forma aliqua ipsius intelligentis; immo solo actu intelligendi intelligens est formaliter intelligens; sed per speciem intelligit intelligens sicut per principium effectivum, sicut etiam grave descendens, est formaliter grave sola gravitate, et formaliter descendens solo descensu”; see also p. 157.

<sup>62</sup> See *De intellectu et specie*, 155 and 161. Cf. *Ordinatio*, I, dist. 3, q. 1, 203 and Godfrey, *Quodlibet*, IX, q. 19, 272. See also Stella, “La prima critica di Hervaeus Natalis O.P.”, 137-138.



on the act of knowledge, which leads Hervaeus to emphasize the passivity of the intellect<sup>63</sup>.

In his commentary on the *Sentences*, Hervaeus introduces few noteworthy doctrinal innovations concerning the species doctrine. He argues that Henry's replacing of the species by an intellectual habit is irrational. Firstly, Henry does not account for the distinction between primary acquisition of knowledge (based on the species) and scientific reasoning, in which intellectual habits play a role. Secondly, inasmuch as they relate to external objects, habits must contain forms. But then, one cannot successfully distinguish between these forms and the intelligible species<sup>64</sup>. Like Scotus, Hervaeus characterizes the abstraction of intelligible species as an "actio realis", to be distinguished from logical abstraction<sup>65</sup>. His description of the role of phantasms in cognitive processes<sup>66</sup> is a clear example of how Hervaeus, more decidedly than Thomas and Duns, stresses the dependence of human knowledge on sensory representations<sup>67</sup>. Indeed, phantasms are no longer seen as subsidiary causal factors; their role in the production of intelligible species is not necessarily subordinate<sup>68</sup>. This view of phantasms may have developed under the influence of Giles of Rome, and bears resemblance to the ideas of John of Jandun and his followers<sup>69</sup>.

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<sup>63</sup> Cf. *De intellectu et specie*, 151: "Intellectivum autem sicut et intelligere, licet significetur per modum activi, non tamen est secundum rem activum, sed passivum; nam ex hoc dicitur aliquid intellectivum, quod natum est recipere actum intelligendi." In this sense he conforms to a widespread tendency in contemporary Thomism, present also in Thomas Sutton. The latter, however, characterizes the mental act as causally depending upon an extrinsic cause, viz. not upon the intelligible species; see below, subsection 4.

<sup>64</sup> See *In IV Sententiarum volumina*, Venetiis 1505, II, dist. 3, q. 4, 10ra, where Hervaeus argues for the distinction between species and act.

<sup>65</sup> *In II Sententiarum*, dist. 17, q. 2, a. 1, 23va: the logical abstraction of, e.g., man from Socrates is not an "actio realis". See already Albert the Great, *Summa de creaturis*, II, q. 58, a. 1, 501a: the intellect abstracts, e.g., the notion 'man' from individual men, not soul from body. See also U. Dähnert, *Die Erkenntnislehre des Albertus Magnus*, 77.

<sup>66</sup> *In II Sententiarum*, dist. 17, q. 2, a. 1, 23vb.

<sup>67</sup> See also Stella, "La prima critica di Hervaeus", 138, for Hervaeus' relation to these authors.

<sup>68</sup> Cf. *In II Sententiarum*, 23vb-24ra.

<sup>69</sup> See § 4.

In his *Quolibeta*, intelligible species are not argued for in the more appropriate part of the work<sup>70</sup>, and are even rejected in a later passage examining an opinion of Durandus of Saint-Pourçain<sup>71</sup>. The intellectual act—Hervaeus observes—is not necessarily caused by the species or by the objects. Indeed, (1) knowledge is possible without species; (2) the analogy between senses and intellect is unfounded; (3) the mediating role of species cannot be grounded in the likeness with external objects: the species, insofar as it exists in the intellect, differs from any external object; finally, (4) the species is presumed to persist after the act, and therefore is an effect rather than the cause of the act<sup>72</sup>. Point (4) is basically a version of the position associated with Olivi. The possible intellect does not need species originating in extra-mental reality for the purpose of carrying out its immanent act, since the object is required only as “*causa sine qua non*”<sup>73</sup>.

#### 1.4. Thomas Sutton

It has become commonplace to emphasize that, after the death of its founder, Thomism came to embody views that are not expressed in the writings of Aquinas. This process began with his early disciples. Deviant tendencies in the reception of the doctrine of intelligible species are clearly present in the works of Hervaeus. Another case in point is the work of the English friar Thomas Sutton<sup>74</sup>.

In his defence of the necessity of intelligible species against Henry of Ghent, Sutton, like Hervaeus, emphasizes the passivity of

<sup>70</sup> See *Quodlibetum* II, q. 8, regarding the relation between “*intelligere*” and “*dicere*”.

<sup>71</sup> *Quodlibetum* III, q. 8, 78r-80v, reprinted in J. Koch (ed.), *Durandus de S. Porciano o.p., Quaestio de natura cognitionis (In II Sent. (A), dist. 3, q. 5) et Disputatio cum anonymo quodam nec non Determinatio Hervei Natalis*, Münster 1929, 43-75. For Durandus’ opposition, see below § 2.1.

<sup>72</sup> *Quodlibetum* III, q. 8, ed. Koch, 59-60; cf. also p. 68.

<sup>73</sup> *Quodlibetum* III, q. 8, 63.

<sup>74</sup> Thomas Sutton, 1250/60—1315; ca. 1298 magister in theology; his first two series of *Quodlibeta* (1284-87)—preceded by *Quaestiones ordinariae*, qq. 12-15—are directed against Henry of Ghent; *Quodlibeta* III-IV show that at the moment of their composition he was acquainted with Duns Scotus’ writings. For more bio-bibliographical data, see Roensch, *Early Thomistic School*, 44-51, and the introductions to the editions of his works. The following editions are used: *Quodlibeta*, eds. M. Schmaus & M. González-Haba, München 1969, and *Quaestiones ordinariae*, ed. J. Schneider, München 1977.

the human intellect in mental acts<sup>75</sup>. Furthermore, he tends to assimilate the intelligible species with the mental act as such. The blending of representation and act in intellectual cognition arose within the context of a peculiar syncretism, widely practiced in Sutton's days, of Augustinian teachings and Peripatetic cognitive psychology. In order to adequately counter the neo-Augustinian opposition, many Thomist authors cite Augustine's works in defence of psychological views otherwise open to criticism for their markedly naturalistic flavor. For example, Sutton's frequent appeal to Augustine's authority in defence of the identity of (sensible) species and perceptual act must be understood from this context<sup>76</sup>. Given this identity, Thomas Sutton exploits the Peripatetic parallel between perceptual and mental act to argue that mental act and (actual) representation of cognitive content are to be assimilated.

In the second question of the *Quaestiones ordinariae*, Sutton asks whether the possible intellect is a completely passive power<sup>77</sup>. Within that framework he characterizes the intelligible species as (formal) principle of intellectual knowledge, and describes the act of intellection as "esse ipsius speciei intelligibilis perficientis intellectum"<sup>78</sup>. Thus, the mental act is characterized as the presence of the (content-bearing) species in the intellect, but is not identified with intellectual content as such. Sutton's intention to assimilate—without identifying *tout court*—mental act and representation is confirmed by other texts<sup>79</sup>. His incomplete identification amounts to the claim that possessing intelligible species is a sufficient condition for performing mental acts.

Sutton provides an interpretive key for his view that human intellection relates passively to intelligible species, when he characterizes the species as "natura", that is, as "principium mutandi illud in quo est"<sup>80</sup>. This statement implies that the mental act depends on

<sup>75</sup> *Quodlibetum* I, q. 16, 108. See D.E. Sharp, "Thomas of Sutton, O.P. His place in Scholasticism and an account of his psychology", in *Revue néoscholastique de philosophie* 36(1934), 332-354, on p. 333, and *Quaestiones ordinariae*, "Einleitung", 199\*.

<sup>76</sup> "Einleitung", cit., 207\*; *Quaestiones ordinariae*, q. 15, 444; cf. q. 21, 578 and q. 22, 610; see also *Quodlibetum* I, q. 13, 87-89; II, q. 13, 264.

<sup>77</sup> *Quaestiones ordinariae*, q. 2, 36.

<sup>78</sup> *Quaestiones ordinariae*, q. 2, 53 and 62.

<sup>79</sup> *Quodlibetum* I, q. 14, 110; *Quaestiones ordinariae*, q. 22, 611.

<sup>80</sup> *Quaestiones ordinariae*, q. 2, 58-59; for the background, see *Physics*, II, textus 3, = 192b21-23: "(...) nature is a source or cause of being moved and of being at rest in

the intelligible species for its specific content. It is not caused by the species, however, for a causal dependence requires a truly external principle, which the species is not.

In discussing the origin of the species as mental representation, Sutton provides more details concerning the intellect's passivity. His account of the origin of intelligible species is grounded in two apparently conflicting claims. On the one hand, he holds that the phantasm causes the mental representation of a cognitive content<sup>81</sup>; on the other hand, he rejects Henry of Ghent's doctrine of the illuminated phantasm moving and informing the possible intellect<sup>82</sup>. Indeed, the idea that the agent intellect enables the phantasm to actualize the possible intellect is unacceptable, because the phantasm is a representational device operating within the bounds of the sensible realm. Sutton disagrees with Giles of Rome on this point. Giles maintains that the illuminated phantasm is capable of producing an intelligible likeness of itself in the possible intellect<sup>83</sup>, whereas Sutton envisages the following alternative:

Sed non est ita, sed sicut artifex cum instrumento agit in materiam unum effectum, scilicet formam artificialem producendo, ita intellectus agens cum phantasmate tamquam cum instrumento agit in intellectum possibilem, speciem abstractam inducendo.<sup>84</sup>

The agent intellect makes instrumental use of phantasms to produce the intelligible species and thus, indirectly also to bring about the cognitive act<sup>85</sup>. Sutton emphasizes the exceptional character of this production, which is indeed unique, involving the joint action of an immaterial power and a material instrument that results into an immaterial effect. What is potentially intelligible in sensible reality acquires an immaterial status by virtue of the intelligible species. This transformation must be understood from the particular intermediate position, halfway between the sensible and the immaterial realms, occupied by the soul in the created universe<sup>86</sup>. Sutton ob-

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that to which it belongs primarily, in virtue of itself and not in virtue of a concomitate attribute."

<sup>81</sup> *Quaestiones ordinariae*, q. 16, 458.

<sup>82</sup> *Quaestiones ordinariae*, l.c., 462-63.

<sup>83</sup> See ch. III, § 2.3.

<sup>84</sup> *Quaestiones ordinariae*, l.c., 466.

<sup>85</sup> Cf. Thomas Aquinas, *De veritate*, q. 10, a. 6, ad 7; this view was accepted also by Duns, see above.

<sup>86</sup> *Quaestiones ordinariae*, 466.

serves that, from this vantage point, one can also understand Aristotle's difficulties in devising appropriate metaphors for this peculiar production.

Although the possible intellect, being a form, is not totally potential<sup>87</sup>, its full act is causally dependent on an incomplex object<sup>88</sup>. Thus, according to Sutton, the intellect is merely a "causa materialis" for the mental acts it receives<sup>89</sup>. As in other Peripatetics, the first act as "simplex apprehensio" furnishes the elements for the "verbum", and thus lays the ground for discursive thought<sup>90</sup>.

In discussing how the human intellect attains knowledge of substantial reality with the aid of sense-dependent species, Sutton examines a recurrent problem in medieval thought. His analysis is most likely prompted by Giles of Rome's views<sup>91</sup>, and conceived independently of Richard of Middleton's speculation<sup>92</sup>. However, Sutton falls in with Richard's view when he claims that substances are only known on the basis of species representing accidents. Occasional failures to grasp substantial essences provide evidence that appropriate species are not available to the soul. Knowledge of substance, therefore, is the product of a "collatio"<sup>93</sup>.

Undoubtedly, Thomas Sutton's speculation on intelligible species does not break new grounds. Its significance is largely historical, as a vigorous defence of the Thomistic legacy in the philo-

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<sup>87</sup> *Quaestiones ordinariae*, q. 17, 491: the possible intellect as form is endowed already with a certain actuality before the reception of the species. Theophrastus, Godfrey and Richard of Middleton were already concerned with the ontology of the possible intellect.

<sup>88</sup> *Quaestiones ordinariae*, q. 17, 494: "(...) dicendum quod non omne obiectum intellectus est agens effective actum intelligendi in intellectum, sed solum obiectum incomplexum, et adhuc non omne incomplexum, sed solum res materialis, quae per intellectum agentem suam speciem in intellectu".

<sup>89</sup> *Quaestiones ordinariae*, q. 17, 479-481. Aquinas described the role of sense perception in the production of the intellectual cognition as "materia causae"; see ch. II, § 3.5.

<sup>90</sup> See *Quaestiones ordinariae*, 479-481; *Quodlibetum* I, q. 16, 111; q. 17, 117-118.

<sup>91</sup> Cf. *Quaestiones ordinariae*, "Einleitung", 199\*-203\*. According to Giles, *De cognitione angelorum*, 81va-b, the material thing communicates itself completely throughout the entire process of knowledge, but only the intellect is capable to apprehend its essence; see ch. III, 2.3. See also pp. 203\*-205\* for the background of this issue in Duns Scotus. Hervaeus addresses this problem in *Quodlibetum* V, q. 10, ad 4, 122ra.

<sup>92</sup> See ch III, § 4.2.

<sup>93</sup> *Quaestiones ordinariae*, q. 21, 581-591; for discussion, see "Einleitung", 210\*-213\*.

sophical disputes flaring at the end of the 13th century. His views, however, do not merely duplicate Aquinas' theses on mental representation. Like Hervaeus, he emphasizes more forcefully than Thomas the dependence of mental acts upon sensory representations. An additional original aspect of his approach, which is also historically significant, is a weakening of the distinction between mental representation and cognitive act<sup>94</sup>.

### 1.5. *The ontology of mental representations: "esse diminutum" and "esse obiectivum"*

The early 14th-century debate on intelligible species introduces the important psychological expression "esse obiectivum", characterizing the somewhat peculiar being of the cognitive object insofar as it exists in the human intellect. This may be regarded as a qualification of the more general expression "esse intelligibile", already used by Thomas<sup>95</sup>. Duns Scotus uses "esse obiectivum" interchangeably with "esse cognitum", "esse repraesentatum" and, more significantly, "esse diminutum"<sup>96</sup>. The latter expression is introduced in the course of the 13th century, and provides the terminological and systematic basis for the other expressions which are, in a pregnant sense, psychological renderings of this central ontological qualification of the things that are known.

The origin of "esse diminutum" is the Arabic translation of *Metaphysics* VI, 1026a33f, in which the "remaining genus of being" (accidental and true being) is translated as the "diminished genus of

<sup>94</sup> See, for a similar position, later 14th-century Averroists, such as James of Piacenza (cf. § 4.6), and the early Renaissance Peripatetics, discussed in ch. VI, § 2-3. During the Second Scholasticism, in contrast, the species will be sharply distinguished from the actual, that is, "formal" cognitive representation; cf. ch. X and XII, in vol. II.

<sup>95</sup> See Thomas Aquinas, *In Aristotelis librum De anima*, II, lectio VII, 310. See also the expression "esse intellectuale" in Albert, *De intellectu et intelligibili*, II, c. 1, 504b.

<sup>96</sup> In *Ordinatio*, II, dist. 3, p. 2, q. 1, *Opera omnia*, ed. Balic, vol. VII, 526, Duns qualifies cognitive objects as having only a diminished being. For other references, see A. Maurer, "Ens diminutum: a note on its origin and meaning", in *Mediaeval Studies* 12(1950), 216-222, on pp. 221-22. The denominations "esse intelligibile", "esse repraesentatum", and "esse cognitum" are to be found in the work of one of Duns' disciples; see Guillelmus Alnwick, *Quaestiones disputatae de esse intelligibili et de quolibet*, ed. A. Ledoux, Quaracchi 1937, q. 1. Alnwick, however, describes the "esse repraesentatum" as the representing form, and the "esse cognitum" as knowledge; cf. *o.c.*, p. 8.

being”<sup>97</sup>. In the wake of the Latin translations of Arabic commentators, the notion of diminished being pervades 13th-century Western psychological texts. Roger Bacon and Adam Buckfield apply this notion to true being. Albert does not use it. Moerbeke corrects the erroneous Arabic-Latin translation, but Thomas still uses it to denote intention, thus establishing the first connection between the diminished being and the species doctrine<sup>98</sup>. This notion, known also to Siger, Godfrey and Henry of Ghent, plays a central role only in 14th-century psychology, as is clear from the works of Duns Scotus and Hervaeus. And according to Peter Aureol, things that come to be known are *ipso facto* assigned an additional mode of being<sup>99</sup>.

During the early 14th century, the idea of an objective being is also linked with the discussion on the status of universals. The theory of the universal as “fictum”, characterized by an “esse obiectivum”, was championed by a number of masters, including Henry of Harclay and Peter Aureol<sup>100</sup>. Ockham endorsed this view in the *Expositio Aurea* and in the first version of his comment to the *Sentences*, but changed his mind on account of Walter Chatton’s criticisms<sup>101</sup>.

An important distinction between ‘objective’ and ‘subjective’ existence, relative to cognitive contents and intelligible species, is put forward by Hervaeus. In *De intellectu et specie*, this unconventional Thomist philosopher observes that material forms exist “objective” in the human intellect, whereas species are present there as “in subiecto”<sup>102</sup>. This distinction recurs, *inter alia*, in James of Pia-

<sup>97</sup> See A. Maurer, “*Ens diminutum*: a note on its origin and meaning”.

<sup>98</sup> Also during the Renaissance, the species are regarded, especially by Platonic authors, as possessing a weaker kind of being; cf. Giordano Bruno’s analysis of the species, viz. “*umbrae*” in ch. VIII, § 3.3. For a contemporary parallel, see L. Wittgenstein, *Philosophische Untersuchungen*, I, sec. 304, on the ontology of mental entities.

<sup>99</sup> See *In I Sent.*, dist. 35, a. 1; see *infra*, § 2.3.

<sup>100</sup> Henry of Harclay, 1270–1317; see G. Gál (ed.), *Gualteri de Chatton et Guillelmi de Ockham Controversia de natura conceptus universalis*, in *Franciscan Studies* 27(1967), 191–212, on p. 193. For Aureol, see *In I Sent.*, dist. 9, a. 1, Roma 1596, 319f and *infra*.

<sup>101</sup> Cf. G. Gál (ed.), *Gualteri de Chatton et Guillelmi de Ockham Controversia de natura conceptus universalis*, 199–212; see also below, § 3.1.

<sup>102</sup> *De intellectu et specie*, cit., 162; see also p. 164: the “*entia realia*” exist as universals according to an “*esse obiectivum*” in our soul. The expression “*esse obiectivum*” recurs in *Quodlibetum*, III, q. 1, c, in *Quodlibeta*, Venetiis 1513, 68rb.

cenza, and plays a crucial role in Marcantonio Zimara's arguments for intelligible species<sup>103</sup>.

James of Ascoli, a relatively unknown figure, devotes two interesting questions to this notion of objective being<sup>104</sup>. The distinction between formal and objective being is crucial to the very notion of divine knowledge of creation: without the distinction, God would be identical with the things he knows. The "esse obiectivum" has different meanings. It applies to external cognitive objects as known by the mind, or to objects lacking formal (that is, mind-independent) being, that are either "fictitia" (for example, the unicorn) or else "entia rationis" (some simple intentions)<sup>105</sup>. Also in James, the being attributed to cognitive objects is a sort of being weaker than 'real' being<sup>106</sup>. External things exist "objective" in the mind, that is, they acquire intelligible being, when the intellect produces their species:

Circa secundum membrum, quod est difficilius, est sciendum quod in nobis eadem productione numero qua species lapidis producitur per se in intellectu possibili, eadem productione numero et non alia producitur per accidens lapis in esse intelligibili.<sup>107</sup>

The distinction between objective and formal (or subjective) being is a milestone in the history of Western psychology. The concept of "esse obiectivum" plays a crucial role in the rejection of the species by John Baconthorpe and William of Ockham<sup>108</sup>. For example, this notion enables the early Ockham to formulate a coherent distinction between cognitive act and mental content without intelligible species: objective being singles out and qualifies the conceptual content that appears to the intellect, which is not a

<sup>103</sup> See ch. IV, § 4.6, and ch. VII, § 1.2.

<sup>104</sup> T. Yokoyama (ed.), "Zwei Quaestiones des Jacobus de Aesculo über das Esse Obiectivum", in *Wahrheit und Verkündigung*, vol. I, eds. L. Scheffczyk, W. Detthof & R. Heinzmann, München 1967, 31-74. James' scholarly activity covers mainly the first decades of the 14th century; 1309, master of theology, and in 1311 regent master of the Franciscans in Paris. De Rijk, "Quaestio de ideis. Some notes on an important chapter of Platonism", in *Kephalaion. Studies in Greek Philosophy and its Continuation*, eds. J. Mansfeld and L.M. de Rijk, Assen 1975, 204-213, suggests, on p. 210, that James coined the concept of "esse obiectivum". This is quite unlikely, because, during the same period, Hervaeus uses this concept; cf. *Quodlibetum* III, q. 1, c, f. 68rb.

<sup>105</sup> *Quaestiones de esse obiectivum*, 43-44.

<sup>106</sup> *Quaestiones de esse obiectivum*, 44-45.

<sup>107</sup> *Quaestiones de esse obiectivum*, 53.

<sup>108</sup> See below § 2.2.



(subjective) component of the intellect in the same way as intellections regarded as psychological entities may be part of the intellect<sup>109</sup>.

The expression "esse obiectivum" reappears in Renaissance disputes concerning the modalities of the mental act<sup>110</sup>. Present also in the epistemological writings of Suarez and other later schoolmen, it acquires a new, prominent meaning in Descartes' theory of ideas<sup>111</sup>. It is also noteworthy that Henry of Harclay appealed to the dichotomy subjective and objective being in order to distinguish between the way species and ideas are present in the mind<sup>112</sup>.

The notion of objective being is a first attempt to understand the ontological status of external things represented in (and/or known by) the human mind. We may legitimately ask whether it is an appealing solution, as it does not explain satisfactorily how mental representations are produced, that is, how things come to be represented by the mind. It may indeed be argued that the notion plays no explanatory role here, and unnecessarily multiplies entities. Its conceptual significance, however, lies in the sharp distinction it enables to be drawn between the psychological or intentional realm and the physical domain.

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<sup>109</sup> Ockham, *In II Sent.*, 307: "(...) respondeo quod duplex est abstractio intellectus agentis. Una est causare intellectionem intuitivam vel abstractivam partialiter cum obiecto vel habitu, modo praedicto, quae intellectio est omnino abstracta a materia, quia immaterialis est in se et habet esse subiective in immateriali. Alia est abstractio per quam producit universale sive conceptum rei universalem in esse obiectivo, sicut alias dictum est."

<sup>110</sup> The distinction plays a crucial role in Agostino Nifo's speculation on mental acts, as well as in the controversy, regarding the agent intellect's illumination, between Caietanus and Sylvester of Ferrara. Pomponazzi applies an 'objective-subjective' distinction in his argument for the mortality of the human soul, which, however, does not primarily regard the ontology of mental acts or representations. Finally, Marcantonio Zimara will argue that the 'objective' being of the "quidditas" in mind requires a 'subjective' reception of the intelligible species.

<sup>111</sup> In general, Descartes' distinction between objective and formal being has been interpreted against the background of the later Scholastic views. In order to formulate a more balanced judgement on the possible sources and doctrinal background of Descartes' distinction, I think it is necessary to take into account the medieval and Renaissance Peripatetic psychology. For discussion, see ch. X, § 1.2.

<sup>112</sup> A. Maurer (ed.), "Henry of Harclay's questions on the divine ideas", in *Medieval Studies* 23(1961), 163-193, on pp. 171-74. During the later Renaissance, the intelligible species will be assimilated to idea; cf. Giordano Bruno and Scipione Agnello, discussed in ch. VIII, § 3.3 and 5. See also ch's XI and XIII for a discussion of the (possible) relation of the 17th-century theory of ideas to the doctrine of intelligible species.

## § 2. FROM DUNS TO OCKHAM: CHALLENGES TO THE INTELLIGIBLE SPECIES

The scathing criticism of Ockham is preceded by the objections of other theologians, like Durandus of Saint-Pourçain and Peter Aureol. John Baconthorpe, following the path traced by Godfrey, rescues the species only through a complete identification with the cognitive act<sup>113</sup>. These authors play a central role in 16th- and 17th-century controversies. In particular, Durandus is assigned a surprisingly high position in the philosophical firmament of those days: in Salamanca there was a chair for the study of his doctrines<sup>114</sup>.

### 2.1. *Durandus of Saint-Pourçain*

In the eyes of later generations of philosophers, especially the authors of the Second Scholasticism, Durandus of Saint-Pourçain<sup>115</sup> is one of the main opponents of the intelligible species. He rejects the species in his comment on the second book of the *Sentences*, while his comment on Lombard's first book, repudiating the necessity of the agent intellect, prepares the ground for eliminating intelligible species from cognitive psychology<sup>116</sup>.

The necessity of an agent intellect was generally justified on the ground that it carries out an indispensable operation regarding either the phantasms or the possible intellect<sup>117</sup>. Durandus argues that in both cases this operation is superfluous. The agent intellect cannot

<sup>113</sup> See ch. III, § 3.3, and Olivi's position discussed in § 3.4; however, cf. already Albert the Great, *Summa de creaturis*, II, q. 5, a. 2, ad 4, in *Opera*, vol. XXXV, 72.

<sup>114</sup> A. Guy, *Esquisse des progrès de la spéculation philosophique et théologique au cours du XVI<sup>e</sup> siècle*, Paris 1943, 13; H.J. Müller, *Die Lehre vom verbum mentis in der spanischen Scholastik*, Münster 1968, 15.

<sup>115</sup> Durandus de Sancto Porciano, ca. 1270—1332; joins as an adolescent the Dominicans; studies theology and philosophy in Paris; doctor in 1313; reads the *Sentences* in 1307-8; definitive version of his commentary in 1317-18. For the historical and doctrinal context of Durandus' scholarly activity, see J. Koch, *Durandus de S. Porciano. Forschungen zum Streit um Thomas von Aquin zu Beginn des 14. Jahrhunderts*, Münster 1927; idem, "Die Verteidigung der Theologie des Hl. Thomas von Aquin durch den Dominikanerorden gegenüber Durandus de S. Porciano O.Pr.", in *Xenia Thomistica*, vol. III, Roma 1925, 327-362; idem, "Die Magister-Jahre des Durandus de S. Porciano O.P. und der Konflikt mit seinem Orden", in *Kleine Schriften*, Bd. II, Roma 1973, 7-118.

<sup>116</sup> Olivi adopted a similar strategy; cf. ch. III, § 3.4.

<sup>117</sup> Durandus de Sancto Porciano, *In Sententias Theologicas commentarium libri IIII*, Venetiis 1571, I, dist. 3, q. 5, 27ra.

perform an operation on sensory images for various reasons. (1) Being an immaterial entity, it cannot impress on phantasms what supposedly enables them to move the possible intellect, for this impression would inevitably become material upon reception by the phantasm. (2) The agent intellect cannot abstract (the analogue of) a form from sensory representations, because an abstraction is either real or logical, and a contradiction follows on either account. The former type of abstraction concerns actual entities, which the intelligible species are not: in fact, accidents cannot be abstracted, “(...) quia forma non migrat de subiecto in subiectum”. And an “abstraccio secundum rationem” can be carried out only by knowing entities with respect to known things, whereas phantasms are not known, and the agent intellect is not a knowing faculty<sup>118</sup>. Moreover, there is no satisfactory explanation of how the agent intellect isolates the “quidditas” from material conditions. (3) There is no sound analogy between, for example, the light enabling color to move the power of sight, and the agent intellect enabling, by its mere presence, sensory representations to move the possible intellect: color has in itself the capacity to move the power of sight.

Turning to the relations between agent and possible intellect, Durandus states that the possibility of mutual interactions does not ensure the necessity of the agent intellect on independent grounds. But an unconditional proof of necessity appears to be impossible. Thus, the agent intellect has no *raison d'être*. It is supported neither by Augustine's authority, nor by Aristotle's opinion, which is to be accepted only insofar as it conforms to truth<sup>119</sup>.

The refutation of the need for an active feature of mind is the first step in Durandus' argument against formal mediation in intellectual cognition. In fact, the existence of mental representations depends either on sensory representational devices or on the abstractive capability of the active mind. Both alternatives are rejected by Durandus, who takes the course of anchoring knowledge acquisition in the following principle:

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<sup>118</sup> *In Sent.*, I, dist. 3, q. 5, 27ra-b.

<sup>119</sup> Cf. *In Sent.*, I.c., 27va-28ra.

(...) omne illud per quod tamquam per repraesentativum potentia cognitiva fertur in alterum est primo cognitum.<sup>120</sup>

This principle enables one to identify species in perception with the sensible qualities of objects<sup>121</sup>. For the same reason, there is no need for a species in intellectual knowledge, because the intellect can grasp the universal nature immediately in the phantasms<sup>122</sup>.

Durandus rejects the necessity of any mental representation, using as a lever the thesis that anything allowing us to know a determinate object must already be known by us<sup>123</sup>. This methodological rule, which Durandus assumes to be self-evident, has a brilliant future ahead of it<sup>124</sup>. Other Scholastic philosophers reacted to this view by emphasizing that the species, though playing a crucial causal role in the psychological process of knowledge acquisition, cannot be identified with the first cognitive object, and that it is unavailable to primitive conscious inspection. At the end of the 15th century, for instance, Peter Crockaert meets the Durandian type of objection when he observes that the species is known, though only "causaliter" (rather than "formaliter"). Thus, without lightly dismissing objections against unknown cognitive principles, he argues for the species' integration in the cognitive process, emphasizing its causal function<sup>125</sup>. Raphaele Aversa, at the beginning of the 17th century, argues against Durandus' principle: the intelligible species represents "effective" rather than "formaliter"—that is, not as an iconic image. One does not need to grasp the species before attaining knowledge of the object it represents. Thus, Aversa stresses the unconscious role of the species in the overall economy of cognition<sup>126</sup>.

<sup>120</sup> *In II Sent.*, dist. 6, q. 6, 139va. For discussion of Durandus' criticisms of the species doctrine, cf. Prezioso, *La "species"*, 73-81.

<sup>121</sup> Durandus, *In II Sent.*, dist. 6, q. 6, 139va.

<sup>122</sup> *In II Sent.*, dist. 6, q. 6, 140ra; cf. Leff, *The Dissolution*, 33.

<sup>123</sup> *In II Sent.*, dist. 6, q. 6, 139va.

<sup>124</sup> See the position of Ockham, discussed in § 3.1, and see also Prezioso, *La "species"*, who maintains that the notion of intelligible species paved the way for modern phenomenalism; cf. p. 81: "Il che significa che, se la specie è mezzo di conoscenza, essa fatalmente, e non già l'oggetto esterno, diventa il primo termine da noi attinto e conosciuto. La species quindi spiana la strada al fenomenismo moderno."

<sup>125</sup> See ch. V, § 2.7.

<sup>126</sup> See ch. X, § 2.2.5. Many later schoolmen will consider the intelligible species as an 'effective' representation; see ch. X, *passim*. Cf. Hervaeus' view.

## 2.2. John Baconthorpe

In the commentary on the *Sentences* by John Baconthorpe<sup>127</sup>, the initial part of the question concerning the species is devoted to an extensive review of arguments *pro* and *contra* this doctrine by his predecessors. John pays some attention to Henry of Ghent and Thomas, but concentrates in particular on Scotus' thesis that the intelligible species must somehow precede the cognitive act proper. As was pointed out in the previous section, Duns' emphasis on a representing entity, understood as somehow *prior* to the intellectual act, is undoubtedly a problematic aspect of his argument. And if we are to take serious what Aristotle says about the potentiality of the possible intellect (that is, its being a leaf with nothing written on it), so Baconthorpe argues, then there is no room for a species preceding the intellectual act. The intellect is nothing before knowing, and thus it cannot have previously assimilated a species. Indeed, the first thing received by the intellect is the "intelligere" itself<sup>128</sup>.

Baconthorpe ingeniously plays Aristotle and Averroes against Duns, making a strong case against a *dispositio media* in intellectual knowledge<sup>129</sup>. Only in sense perception there is room for a mediating entity or function, physiologically identifiable in the organs of

<sup>127</sup> Joannes Bachonus, died ca. 1348; English Carmelite philosopher and theologian, who studied at Oxford; read the *Sentences* before 1318; most of his works are on theological subjects, but he left also several expositions of Aristotelian works. For his fame as interpreter of Averroes in the 15th and 16th centuries, see B. Nardi, *Sigieri di Brabante nel pensiero del Rinascimento italiano*, Roma 1945, 105f. Agostino Nifo praises him as interpreter of Averroes; cf. *Expositio in tres libros Aristotelis de anima*, Venetiis 1553, 159va. He is referred to by: Crisostomo Javelli, *Quaestiones naturales super iij. libros Aristotelis de anima*, in *Opera*, Lugduni 1580, 613-707, on p. 688b, 689a, and 690a ( see also ch. VII, § 2.3); Gerolamo Girelli, *Adversus quaestiones Marci Antonii Zimarae de speciebus intelligibilibus (...)*, Venetiis 1561, 25v (ch. VII, § 4.1); Antonio Polo, *Abbreviatio Veritatis Animae Rationalis*, Venetiis 1578, 242 (ch. VIII, § 1.4); and Jacopo Zabarella, *Liber de speciebus intelligibilibus*, in *De rebus naturalibus*, Coloniae 1602, 982 (ch. IX, § 1.1).

<sup>128</sup> Joannes Bachonus, *Super quatuor Sententiarum libros*, Venetiis 1526, 151ra: "Ergo primum receptum est intelligere et post est res intellecta producta in esse intellecto simili modo existentie sue extra (vel aliquis habitus quantocumque imperfectus non curo) in quo esse simili modo splendeat obiectum. Sic non precedit similitudo obiecti ipsum intelligere, sed connascit cum eo." He appeals to Aristotle for this view. Indeed, since Theophrastus, the 'nothingness' of the possible intellect was regarded as problematic. That the first thing received by the intellect is intellection as such was theorized already by Godfrey of Fontaines; cf. ch. III, § 3.3. This thesis will frequently reappear during Renaissance disputes; cf., e.g., ch. VI, § 2.

<sup>129</sup> *Super quatuor Sententiarum libros*, 151rb: Aristotle nowhere mentions a "species ut sit intellectui ratio recipiendi".

sense. Every receptive perceptual or cognitive power is perfectly capable of grasping its objects without mediation, for a possibly preceding, mediating form would only obstruct the reception of the proper cognitive object<sup>130</sup>. John provides an additional argument for his thesis by characterizing the intellect's first act as an *actus rectus*. If there were any "species impressa", the intellect would have to direct itself towards this species first, and its act would become *reflexus*<sup>131</sup>. This argument, however, assumes that the species is the first thing to be known<sup>132</sup>.

According to Baconthorpe, the conjunction of knowing soul and known thing takes place in an "esse obiectivo expresso non impresso"<sup>133</sup>. Before this event occurs, so Baconthorpe reiterates, the intellect receives only the "intelligere", and not any kind of species<sup>134</sup>. Provided that the species are identified with intellectual acts, one may still maintain that the soul is a "locus specierum"<sup>135</sup>. The cognitive act takes place when the agent intellect lifts the phantasms to a superior, that is, intelligible level<sup>136</sup>. Once more, Averroes is used as an important lever in the species debate.

Baconthorpe's opposition to the "species intelligibilis" as a formal principle is directed against the variety of species understood as *impressae*. This view of species hinges on the unpalatable presupposition that perceptual faculties are autonomously capable of pro-

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<sup>130</sup> *Super quatuor Sententiarum libros*, 151rb: sensible species are received in the organs, not in the "potentia sensitiva"; Baconthorpe appeals to Averroes, *In De sensu*, c. 19.

<sup>131</sup> *Super quatuor Sententiarum libros*, 151va. Similar arguments were used by Henry of Ghent and Durandus. However, Sextus Empiricus had already used this argument against the Stoic doctrine of cognitive impression; cf. ch I, § 1.4.3.

<sup>132</sup> Henry of Ghent, in his refutation of intelligible species, tacitly presumed the species to be the first thing known; cf. ch. III, § 3.2. For a similar argument, see Durandus and Ockham, *infra*.

<sup>133</sup> *Super quatuor Sententiarum libros*, 151vb. This notion of "esse obiectivum"—already present in Hervaeus, and other authors—indicates the ontological status of the things known in the intellect; it is endorsed by the early Ockham in his theory of concepts and universals. The distinction between an "esse expressum" and "impressum" was already made in Henry's discussion of the species. See above, § 1.5 and ch. III, § 3.2.

<sup>134</sup> *Super quatuor Sententiarum libros*, 151vb.

<sup>135</sup> *Super quatuor Sententiarum libros*, 152rb; cf 152vb, where the "species expressa" is identified with the "actus intelligendi".

<sup>136</sup> *Super quatuor Sententiarum libros*, 152rb and 152va: "Et similiter dico modo quo facit eas in actu abstrahendo non imprimendo eas intellectui possibili sed in esse intelligibili eas sibi coniugendo aut offerendo seu exprimendo."

ducing or introducing something in the immaterial intellect prior to its act. Baconthorpe's objections show once again that an understanding of Thomas' doctrine in terms of perspectivist optics is too narrow. Baconthorpe's positive doctrine of the intellectual act, however, seems at least as problematic as the thesis of (mediating) mental representations it is supposed to replace<sup>137</sup>. Furthermore, by postulating the immediate reception of intellective acts, Baconthorpe rules out the very possibility of unconscious mechanisms underlying the acquisition of intellectual knowledge.

### 2.3. *Peter Aureol*

Within the framework of his original reflection on the various stages of the cognitive act, Peter Aureol<sup>138</sup> challenges the idea of mediating intelligible species from yet another perspective. In addition to rejecting the positions of Thomas, Henry of Ghent, and Richard of Middletown, he questions the views of Duns Scotus, Godfrey of Fontaines, and Durandus<sup>139</sup>.

According to Aureol, the activity of the intellect is sufficient to account for the cognitive act, and thus the external world serves no effective purpose in producing intellectual knowledge. Innatism and divine illumination are not appealed to in his ingenious and bril-

<sup>137</sup> For the relation with Godfrey of Fontaines, see also *In I Sent.*, prol., q. 2, a. 4, which is discussed by J.F. Wippel, "The role of the phantasm in Godfrey of Fontaines' theory of intellection", in *L'homme et son univers au Moyen Age*, ed. Ch. Wenin, Louvain-la-Neuve 1986, 573-582, on p. 582.

<sup>138</sup> Petrus Aureoli, ca. 1280—1322; lectured on the *Sentences* first at the Franciscan studia of Bologna and Toulouse (ca. 1312-16) and, finally, in a revised form in Paris during the academic years 1316-18. On the problem of the double redaction of his commentary, see Peter Aureoli, *Scriptum super Primum Sententiarum*, ed. M. Buytaert, St. Bonaventure (N.Y.)-Louvain-Paderborn 1952, xvi-xxi, and Tachau, *Vision and Certitude*, 88-89, note 11. Aureol's commentaries on the *Sentences* owe much not only to those of other theologians, but also to scholars in arts, such as Radulphus Brito and John of Jandun. For an introduction to his thought, cf. Tachau, *Vision and Certitude*, 89-110, who extensively examines his important considerations on the "species sensibiles". His view on intelligible species is cited, inter alia, in: Michael de Palacios, *In tres libros Aristotelis de anima commentarij*, Salamanticae 1557, 259rb-va; Franciscus Suarez, *Liber de anima*, in *Opera omnia*, t. III, Paris 1856, 723a; Collegium Conimbricense, *Commentarii in tres libros De anima Aristotelis Stagiritae*, Venetiis 1616, 337; Ioannes Poncius, *Integer Philosophiae cursus ad mentem Scoti*, Pars III, Romae 1643, 488b and 490b; Ildephonsus de Peñafiel, *Cursus integer philosophicus*, Lugduni 1655, 598a.

<sup>139</sup> See *Commentarium in primum librum Sententiarum*, pars prima, Romae 1596, dist 9, pars prima, 317b-319a.

liantly presented arguments, which are based solely on reflections on the intentional features of mind. Knowing something means positing it as present to the mind<sup>140</sup>. This cannot be attained by merely receiving a species<sup>141</sup>, for a cognitive act, or “formaliter intelligere”, amounts to being psychologically determined by a similitude generated by the human mind<sup>142</sup>.

Aureol, like Henry before him, endorses the principle of economy<sup>143</sup>, which he holds to be compatible with the very idea of mediation occurring through a similitude between the potential mind and its cognitive act, provided that the mind is not a subject receiving this similitude. This is concisely expressed as follows:

Quod in omni intellectione necesse est, quod res emanet in esse intentionali, & illa forma est specularis.<sup>144</sup>

Qualified as existing in an “esse apparens”<sup>145</sup>, the “forma specularis” does not exist, either “realiter” or “subiective”, in the intellect<sup>146</sup>. Moreover, it cannot be identified with the object of intellection. The “forma specularis” is a similitude expressing the object and thus, in conjunction with the cognitive power, it gives rise to a “notitia objectiva”<sup>147</sup>. Aureol’s notion of similitude bears strong resemblance to the scorned intelligible species, and even more to the Arabic intention understood as mental reproduction of the form to be known. Moreover, in describing his view of the intellectual act,

<sup>140</sup> *In I Sent.*, dist. 35, 751a: “Quid dicendum secundum veritatem, & primo quid intelligere formas, dicit aliquid connotatum, scilicet habere praesens aliquid, ut apparens; non dicit autem determinate aliquid in recto. & est primo opinio communis.” Cf. 752b: “& ita patet, quod superior dicebatur, scilicet quod ponere rem in apparenti, est dicere, seu formare; sed in esse apparenti huic; quod nil aliud est, quam habitio rei modum apparentis ab isto est formaliter intellectio.”

<sup>141</sup> *In I Sent.*, 754b.

<sup>142</sup> *In I Sent.*, 755a.

<sup>143</sup> *In I Sent.*, 319b. The so-called Ockham’s razor was in fact a rather widespread principle and appealed to already before Ockham. See, e.g., Henry of Ghent, in ch. III, § 3.2.

<sup>144</sup> *In I Sent.*, 320a. See, for discussion: S. Vanni Righi, “L’intenzionalità della conoscenza secondo P. Aureolo”, in *L’homme et son destin*, Louvain-Paris 1960, 673-680, on p. 675; idem, “Una fonte remota della teoria husserliana dell’intenzionalità”, in *Omaggio a Husserl*, Milano 1960, 47-65, on p. 52, nt. 11.

<sup>145</sup> For the possible sources of this concept, see Tachau, *Vision and Certitude*, 97.

<sup>146</sup> *In I Sent.*, 320a; cf 623a. Cf. already Albert’s opposition against a possible ‘subjective’ reception of the mind (ch. II, § 2.1).

<sup>147</sup> *In I Sent.*, 321a-b.



Aureol frequently uses the term “species”<sup>148</sup>. Quite understandably, these ambiguities and fine-grained differences led to a variety of (often conflicting) interpretations<sup>149</sup>.

In every cognitive act, the thing to be known arises in an “esse obiectivo”<sup>150</sup>. This expression serves to emphasize that nothing ‘real’ is produced in intellectual apprehension, because only external things are endowed with ‘reality’<sup>151</sup>: the objective being characterizing things that are known differs from real or ‘formal’ being. The relationship between mind and the known object is not one of subject and accident. Since they are only intentionally related, the psychological domain is sharply distinguished from that of physical reality.

A thing is known when it appears to the intellect, because the ‘formal’ basis of all knowledge is “habere aliquid praesens per modum apparentis”<sup>152</sup>. This manifestation is not brought about by the intellect’s potentiality, nor by any hypothetical reception of species—for the reception of a (conventionally understood) species would not guarantee the presence of the object<sup>153</sup>. The presence of an object under this modality is a necessary condition for every

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<sup>148</sup> *In II Sent.*, Romae 1605, dist. 11, q. 3, a. 1, 128b: “Confirmo, quia nihil aliud requiritur ad hoc, quod forma aliqua sit aliqua vera apprehensio, nisi quod per ipsam exhibeatur obiectum in esse obiectivo praesentialiter, quod est esse intelligibile. Habet enim sic obiectum praesens est ipsum cognoscere, & è converso: sed species inquantum est similitudo rei, habet ex propria conditione, quod exhibeat rem praesentem: ergo in acie cogitantis, non in esse reali: ergo in obiectivo esse: ergo ex propria conditione habet, quod sit vera comprehensio.” For the expression “acies cogitantis”, see Augustine, *De Trinitate*, XI, c. 9, 996; cf. also John of Paris, *Commentaire sur les Sentences*, I, dist. 27, q. 3, 299-300.

<sup>149</sup> Prezioso, *La “species”*, 83-84 is convinced that Aureol rejects the species, but inconsistently so, since he introduces the “esse apparens” as a new mediating entity; cf. also idem, “L’attività del soggetto pensante”, 325. According to S. Vanni Rovighi, “L’intenzionalità della conoscenza secondo P. Aureolo”, on p. 675, Aureol replaces the Thomistic *species intelligibilis* with the *forma specularis*; quoting *In I Sent.*, 319a-b, Vanni Rovighi concludes, on p. 676, that Aureol rejects the species doctrine. In contrast, Tachau, *Vision and Certitude*, 95, note 30, maintains that Aureol does not reject the intelligible species; on p. 99, Tachau comments on Aureol’s critical attitude towards Gerard of Bologna’s attack upon the species hypothesis. See also B. Nardi, *Il problema della verità*, 41, who argues that Aureol identifies the species with the mind’s object.

<sup>150</sup> *In I Sent.*, dist. 27, 622a; see also 320a, 751b and 753b. For the background of this terminology, see § 1.5.

<sup>151</sup> *In I Sent.*, l.c., 623a-b.

<sup>152</sup> *In I Sent.*, dist. 35, 752a.

<sup>153</sup> *In I Sent.*, l.c., 754b.

cognitive act, and requires "aliquid absolutum" as its foundation<sup>154</sup>. At this point, Aureol states that a similitude and the intellect are sufficient to (re)present the object. However, this claim does not entitle one to identify similitudes and received species, because the act of knowledge is the production of a real similitude ensuring the (epistemic) manifestation of the object to the mind:

unde non est aliud concipere aliquid, nisi formare illud per similitudinem realem existentem in intellectu, formare, inquam, in esse apparenti intellectus ipsi: sic quod intellectio formationem exigit per modum previi, formaliter vero consistit in reali similitudine, connotative vero in ipsa apparitione: potest autem manere similitudo realis in intellectu; sed quia per eam non apparebit res, non dicetur intellectio, seu consideratio realis.<sup>155</sup>

No other "qualitates"<sup>156</sup>—such as the species—are needed here, because a "similitudo informans" is sufficient "ad faciendum rem presentem, & apparentem". However, in spite of the fact that an informing similitude is supposed to present an object to the mind, Aureol emphasizes on several occasions that the *epistemic* presence of the cognitive object in the intellect is due solely to the intentional activity of the latter<sup>157</sup>.

"Formaliter", intellection is the real similitude—that is, the above mentioned 'absolute' foundation, described as the "id quo" manifesting the object to the mind<sup>158</sup>. "Connotative", the mental act is the actual appearance of the object<sup>159</sup>. Elsewhere, Aureol states that the intellect extracts an appearance from the real similitude<sup>160</sup>. Notice, however, that the intellect is supposed to govern the entire process of intellection, from the generation of the real similitude to the manifestation of the object.

<sup>154</sup> *In I Sent.*, dist. 35, 753a-b; see already 320b.

<sup>155</sup> *In I Sent.*, dist. 35, 756b.

<sup>156</sup> One must recall that Duns Scotus, when examining Augustine's theory of vision, described the sensible species as quality; cf. *Ordinatio*, I, dist. 3, pars 3, q. 1, 299.

<sup>157</sup> *In I Sent.*, dist. 35, 757a-b; cf. p. 757b: "Ex quibus patet, quod res in esse apparenti, & formato posita, habet modum intentionalem ex natura ipsius animae."

<sup>158</sup> *In I Sent.*, l.c., 757b. For the 'absolute' foundation, cf. already *In I Sent.*, dist. 9, 320b, and see also 752b, where Aureol defines it as "habitus rei per modum apparentis".

<sup>159</sup> *In I Sent.*, l.c., 756b; cf. 753b.

<sup>160</sup> *In I Sent.*, l.c., 757a-b; see *supra*.

Since intellectual conceiving is grounded in the intra-mental representation of cognitive contents, it cannot depend upon the reception of a species, shrouding rather than disclosing knowable reality to the soul. The similitude as “*forma specularis*”—a product of the knowing mind functionally replacing the traditional species—does not arise in extra-mental reality, and therefore carries no ontological ambiguity<sup>161</sup>. Aureol provides a picture of the human intellect as engaged in the autonomous activity of presenting things to itself, which does not require any sensible image originating from the external world. Knowledge amounts to providing things with a new mode of being, denoted by Aureol as “apparent”, “objective”, “intelligible”, or “intentional”<sup>162</sup>.

The thesis that the cognitive act terminates with the “*esse intentionale*” does not entail that knowledge is a purely subjectivistic phenomenon: the real similitude, grounding the appearance of an object, is essentially a medium rather than an object of knowledge. Notice that perceptual and cognitive states are no longer understood as natural affections, and thus the gap between the material state of man as body and his mental experience is considerably broadened. Appearances are essentially affections of the mind, which belong to an “inner” realm. Yet, there is no privileged access to this realm without external objects triggering perceptual and cognitive states. Paradoxically, the appearance is just the thing manifesting itself; this manifestation, in turn, is made possible by the intentional structure of the intellect<sup>163</sup>.

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<sup>161</sup> See *In I Sent.*, dist. 9, 320a; for the influence of perspectivist optics, cf. Tachau, *Vision and Certitude*, 100-101.

<sup>162</sup> *In I Sent.*, dist. 9, 321b-23a; dist. 27, 622a; the species doctrine presupposes, in contrast, that intellectual knowledge of sensible reality is founded on sensible images; see *In II Sententiarum*, Romae 1605, 128b-129a.

<sup>163</sup> Cf. *In I Sent.*, dist., 9, 321b; *idem*, dist. 27, 625a; see Vanni Rovighi, “L’intenzionalità della conoscenza secondo P. Aureolo”, 677.

## § 3. OCKHAM AND NEW DEFENCES OF THE SPECIES

3.1. *William of Ockham*

William of Ockham<sup>164</sup> derives his epistemology from the basic ontological thesis that reality consists solely of singular substances<sup>165</sup>. Primary cognition is the direct grasp or intuition of existing individuals. Intuitive knowledge is the starting point of every other form of knowledge, because reality consists of individuals<sup>166</sup>. Unfettered by representing or mediating principles, intuitive knowledge is based on an immediate causal connection between a cognitive power and its object; thus, it ensures a direct contact between the human mind and external reality<sup>167</sup>.

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<sup>164</sup> Guillelmus de Ockham, ca.1285/1290—1347/49; joined the Franciscans, and was probably subdeacon in 1306; studied theology at Oxford; lectured on *Sentences* there, 1317-1319; at the end of 1319 the complete *Reportatio* began to circulate; in the early 1320s he worked on the revision of his *Sentences* lectures into an *Ordinatio* and participated in Quodlibetal disputations; completed all requirements as bachelor before going to the London friary in 1320 to await his turn to incept as master; never became regent master, partly because there were many waiting to occupy the Franciscan chair, and partly because of the opposition of John Lutterell; taught at the studium generale of the London custody until 1324, completing all his non-political works; summoned to Avignon in 1324 to answer charges of heresy; fled with Michael of Cesena in 1328 to Ludwig of Bavaria. For more bio-bibliographical data: S. Day, *Intuitive Cognition*, 140; Tachau, *Vision and Certitude*, 113-115; M. McCord Adams, *William Ockham*, 2 vols., Notre Dame (Ind.) 1987, vol. I, xv-xvii.

<sup>165</sup> Cf. G. Leff, *The Dissolution of the Medieval Outlook*, 58: Ockham adapts his epistemology to his metaphysics, which is based on the view that only individual substances subsist. Therefore, it is misleading to state that Ockham intends to free knowledge of external reality from any metaphysical framework, as Day claims, in *Intuitive Cognition*, 168, and F. Hoffman, "Einige Bemerkungen zur Problem der unmittelbaren und der vermittelten Erkenntnis in der Scholastik", in *Renovatio et Reformatio*, Münster 1985, 119-130, on p. 129.

<sup>166</sup> On intuitive and abstractive knowledge in Ockham, see Ph. Böhner, "The realistic conceptualism of William of Ockham", in *Traditio* 4(1946), 307-335; J. Boler, "Ockham on intuitive cognition", in *Journal of the History of Philosophy* 11(1973), 95-106; A. Ghisalberti, *Guglielmo di Ockham*, Milano 1972, 64f; G. Leff, *William of Ockham. The Metamorphosis of Scholastic Discourse*, Manchester 1975, ch. I.

<sup>167</sup> See *Quodlibeta septem*, eds. Ph. Boehner, G. Gál and S. Brown, *Opera Theologica*, vol. IX, St. Bonaventure (N.Y.) 1980, I, q. 13. There are several connections between Ockham's view of intuition and modern theories about *de re* thought: both are about an actually existing object, and are tied to that object constitutively, so that the thought could not exist without that very object existing. However, the kind of impossibility alluded to in contemporary theories about *de re* thought is logical or metaphysical rather than causal—the thought could not exist without the object because it is individuated in a way that makes its relatedness to that object essential to its nature. Cf. Woodfield (ed.), *Thought and Object*, Oxford 1982; T. Burge, "Belief *de re*", in *Journal of Philosophy* 74(1977), 335-362.

External sensible objects are the immediate cause of the acts of sense perception and intellectual cognition. The epistemic relation of 'direct knowledge' is to be understood as a causal relation between certain objects and the human mind<sup>168</sup>. This direct contact presupposes a sharp distinction between thought and reality, which is not a cleavage, however: Ockham's principal aim is to detach cognitive psychology from natural philosophy. This strategy is manifest in his approach to abstractive knowledge.

Intuition is necessary for abstractive knowledge, that is, for knowledge abstracting from the actual existence of the object. Ockham does not draw the distinction between intuitive and abstractive knowledge on the basis of different types of objects of knowledge. It is not the object that determines the mode of knowledge, for the different modes are defined by the nature of the various acts themselves<sup>169</sup>. Abstraction does not concern an essence or shared nature that is abstracted from things, for universal essences do not form part of Ockham's ontology. Intuition and abstraction are distinct because they involve different conceptual relations to the objects. Abstractive knowledge is not directly generated by (singular) entities, and therefore it is "common or universal cognition"<sup>170</sup>. Knowledge is no longer understood in terms of a physiological or ontological relation with the object, and thus abstraction is a purely conceptual process<sup>171</sup>.

Ockham rejects both sensible and intelligible species<sup>172</sup> on the ground that intermediary entities or functions between the human

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<sup>168</sup> I do not discuss the alleged scepticism of Ockham; for a survey of the discussion between Gilson, Pegis and Michalski, on the one hand, and Day, on the other hand, see J. Boler, "Ockham on intuitive cognition", in *Journal of the History of Philosophy* 11(1973), 95-106, on p. 103f. See also M. McCord Adams, "Intuitive cognition, certainty, and scepticism in William of Ockham", in *Traditio* 26(1970), 389-398.

<sup>169</sup> Cf. Tachau, *Vision and Certitude*, 120-121.

<sup>170</sup> *Quodlibetum*, I, q. 13, 74: "Tertio dico quod cognitio prima abstractiva primitae generationis et simplex non est cognitio propria singulari sed est cognitio communis aliquando, immo semper. (...) Secundum assumptum patet, quia nulla cognitio abstractiva simplex est plus similitudo unius rei singularis quam alterius sibi simillimae, nec causatur a re nec nata est causari; igitur nulla talis est propria singulari sed quaelibet est universalis."

<sup>171</sup> See G. Leff, *William of Ockham*, p. 4f.

<sup>172</sup> Cf. A.S. MacGrade, "Seeing things: Ockham and representationalism", in *L'homme et son destin au Moyen Age*, 592; F.E. Kelley, "Some observations on the fictum theory in Ockham and its relation to Hervaeus Natalis", in *Franciscan Studies* 38(1978), 262; Böhner, "The realistic conceptualism of William of Ockham", 321-22;

intellect and individual things would terminate the cognitive act, thus making actual objects inaccessible. This criticism of the species doctrine, whose principal targets are Thomas and Duns Scotus<sup>173</sup>, is strictly related to Ockham's dismissal of epistemological views dominated by the perspectivist-optical model, inspired in its central features to the Arabic interpretation of the Neoplatonic theory of emanation<sup>174</sup>. Not surprisingly, then, Ockham does not distinguish sharply between the perspectivist tradition and the theory of Thomas, attributing to the latter the view that intelligible species are *impressae*<sup>175</sup>.

Ockham prepares the ground for his arguments against intelligible species by giving a detailed description of how the joint action of intuitive and abstractive knowledge gives rise to a habit, which ensures the possibility of reasoning about and preserving memory of the past. Thinking, according to Ockham, is not an episodic process, but involves the capacity to recollect events and conceptual constructs from long term memory. A defence of this thesis is somewhat problematic, precisely because Ockham discards species

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F. Corvino, "La nozione di specie intelligibile da Duns Scoto ai maestri agostiniani del secolo XIV (Gregorio da Rimini e Ugolino da Orvieto)", in *Rivista di filosofia neoscolastica* 70(1978), 164; Maier, "Das Problem der «species in medio»", 433f; A. de Muralt, "La connaissance intuitive du néant et l'évidence de l'argument de potentia absoluta dei dans la théorie occamienne de la connaissance", in *Studia philosophica* 36(1976), 151-52; Hoffman, "Einige Bemerkungen zur Problem der unmittelbaren und der vermittelten Erkenntnis in der Scholastik", 124; Prezioso, *La "species"*, 85-90; P. Chojnacki, "Les facteurs et les limites de la connaissance humaine d'après la critique d'Occam et de Nicolas d'Autrecourt", in *L'homme et son destin au Moyen Age*, 683; Day, *Intuitive Cognition*, 192-94; Ghisalberti, *Guglielmo di Ockham*, 76; Tachau, *Vision and Certitude*, 130-35.

<sup>173</sup> Guillelmus de Ockham, *Quaestiones in librum secundum Sententiarum (reportatio)*, eds. G. Gál & R. Wood, *Opera Theologica*, vol. V, St Bonaventure-N.Y. 1981, q. 13. He attacked also Aureol's concept of "esse apparens", in *In I Sent.*, dist. 27, q. 3, because of its similarity to the Thomistic species; cf. Prezioso, *La "species"*, 89, and Tachau, *Vision and Certitude*, 136. For an extensive discussion of Ockham's relation with Aureol, see Tachau, *Vision and Certitude*, 136-152. The possible influence of Durandus on Ockham is discussed by Maier, "Das Problem der «species in medio»", 439. For his knowledge of Hervaeus, see Kelley, "Some observations on the fictum theory in Ockham and its relation to Hervaeus Natalis". Ockham was surely acquainted with the works of Henry of Ghent; his knowledge of Olivi is uncertain; see Tachau, *Vision and Certitude*, 130.

<sup>174</sup> Cf. ch. II, § 2.3; see also Tachau, *Vision and Certitude*, 132 and Corvino, "La nozione di specie intelligibile", 157.

<sup>175</sup> Cf. *In II Sent.*, ed. cit., q. 13, 253-54; it is likely that Ockham knew the Thomistic positions only from a disciple of Thomas, cf. the notes of the editors. This is suggested by his critique of Thomas on p. 308.

as storing mental contents in the possible intellect. Indeed, in the *Reportatio* he suggests a somewhat artificial solution relating perfect and imperfect intuition to a second or incomplex abstraction. Perfect intuitive knowledge of an object is accompanied by abstractive knowledge of the same object<sup>176</sup>—the latter contributing to form a habit enabling the mind to attain imperfect intuitive knowledge of the object's past existence<sup>177</sup>. The idea of a habit ensuring the possibility of thoughts about the past is crucial to Ockham's argument for the superfluity of intelligible species.

The only prerequisites of intuitive cognition are the intellect and the thing to be known; no species is needed because, once stored in memory, it would elicit a fallacious intuition of something that is no longer present<sup>178</sup>. In addition to object and cognitive potency, abstractive knowledge presupposes intuition. This "derelictum" is not a species, however; it should be identified with a habit facilitating the intellectual grasp of things that the human subject is already acquainted with<sup>179</sup>.

A representational model of knowledge, so Ockham argues, cannot justify the mediation it postulates. In particular, the mediating species plays no cognitive role whatsoever, and even undermines the possibility of knowing external objects. Indeed, if the species is similar to the object it represents, then the object can be grasped immediately; and if this is not the case, how can one assert that knowledge of that object can be achieved through the species?

Ockham's criticism also concerns the relation envisaged by Duns and Thomas between intelligible species and universal. But universals are produced by the human mind, and thus do not belong to Ockham's ontology<sup>180</sup>. Accordingly, the intelligible species, ema-

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<sup>176</sup> This abstractive knowledge is not to be confused with the first abstractive knowledge which follows immediately perfect intuition; cf. *In II Sent.*, 262-63.

<sup>177</sup> *In II Sent.*, 261-62: "Et est hic notandum quod stante cognitione intuitiva alicuius rei, habeo simul et semel cognitionem abstractivam eiusdem rei. Et illa cognitio abstractiva est causa partialis concurrens cum intellectu ad generandum habitum inclinantem ad cognitionem intuitivam imperfectam per quam iudico rem aliquando fuisse." For discussion, see M. McCord Adams, *William Ockham*, 515-525.

<sup>178</sup> *In II Sent.*, 268-269. The only previous criticism of the species based on the requirements of intuitive cognition is to be found in the work of Gerard of Bologna; see Tachau, *Vision and Certitude*, 130.

<sup>179</sup> *In II Sent.*, 269-71.

<sup>180</sup> *In II Sent.*, 304-305. For discussion of Ockham's theory of universals and its development from the universal as "fictum" (having merely objective being) to a

nated from things and representing the universal, is a superfluous notion, possibly involving a category mistake<sup>181</sup>.

Ockham seems unduly influenced by the view of species as iconic representation, typical of the perspectivistic tradition, when he charges Thomas and Duns with conceiving human knowledge as an idle duplication of external reality by way of species. In spite of this evident bias, his five arguments in defence of the claim that species are superfluous became a milestone in the species controversy: (1) if the species has to secure the assimilation of intellect and object, then one would only attain knowledge of accidents, through processes possibly involving an infinite regress<sup>182</sup>; (2) there is no need of species representing objects, for the objects are capable of representing themselves<sup>183</sup>; (3) the idea that matter cannot interact with immaterial entities does not ensure the necessity of species for knowledge acquisition; on the contrary, it establishes that sensible reality does not play a causal role in the production of intelligible species. If, by contrast, one assumes that the material world has a causal efficacy on the mental realm, then it can also weigh directly on the production of the intellection<sup>184</sup>; (4) only the

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"qualitas mentis", or "actus intelligendi" (with subjective being), see St. Read, "The objective being of Ockham's ficta", in *Philosophical Quarterly* 27(1977), 14-31, in particular on pp. 14-17; Day, *Intuitive Cognition*, 199; Ghisalberti, *Guglielmo di Ockham*, 70-74; Corvino, "La nozione di specie intelligibile", 161-63; V. Richter, "Zu Ockhams Entwicklung in der Universalienfrage. Bemerkungen im Zusammenhang mit dem Problem der Chronologie, Abfassungszeit und Authentizität Ockhams nichtpolitischen Schriften", in *Philosophisches Jahrbuch* 82(1975), 177-187.

<sup>181</sup> See in particular his critique of the vicious circle in Duns' argument concerning the *species intelligibilis* and the universal: *In II Sent.*, on pp. 298-304.

<sup>182</sup> *In II Sent.*, 272-73. This objection is intimately connected with the problem Richard of Middletown and Thomas of Sutton twisted their brain on, namely how the intellect can attain knowledge of substance starting from representations whose contents originate in sensory, i.e. accidental, representational devices. As regards the threat of infinite regress, this objection—already present in Henry of Ghent's refutation of intelligible species—is founded upon Plato's third man argument, and was used by Sextus Empiricus against the Stoic doctrine of cognitive representations; cf. ch. I, § 1.4.3. The same argument recurs in Agostino Nifo's refutation of intelligible species; cf. ch. VI, § 3.2.

<sup>183</sup> *In II Sent.*, 273-74: no "repraesentans" is needed in the intuitive cognition, and therefore it is not required in the abstractive knowledge either. Moreover, Ockham introduces a variation on Durandus' dictum: "Item, repraesentatum debet esse prius cognitum; aliter repraesentans nunquam duceret in cognitionem repraesentati tanquam in simile." See already the position of Olivi, discussed in ch. III, § 3.4.

<sup>184</sup> *In II Sent.*, 275: "Sed contra: sicut corporale et materiale non potest esse causa partialis immediata respectu intellectionis quae recipitur in spirituali—quia in intellectu possibili, et est spiritualis qualitas—ita nec materiale potest esse causa partialis



object and the intellect are needed in cognition, because intellectual knowledge does not depend on anything else<sup>185</sup>; (5) assuming that species are necessary for joining object and mind involves, once again, the threat of infinite regress<sup>186</sup>.

A reflection on these objections suggests that Ockham is eager to show the possibility of a viable alternative, rather than to effectively refute an established view on knowledge acquisition. In fact, the second and fourth objections are based on straightforward postulates. The third objection<sup>187</sup> is hardly convincing, and the remaining ones badly misrepresent the *instrumental* role of species<sup>188</sup>.

A remarkable aspect of the arguments leveled against Thomas and Scotus is the unusual twist in the interpretation of Averroes<sup>189</sup>, whom many 13th-century authors regarded as an advocate of intelligible species<sup>190</sup>. In his reply to Thomas' and Scotus' "rationes", Ockham investigates the relation between abstraction and universal concepts. In abstractive knowledge the agent intellect may yield a

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cum intellectu agente concurrens ad producendum speciem, quae est spiritualis, in intellectu possibili qui est etiam spiritualis. Vel sicut tu ponis quod corporale potest esse causa partialis ad causandum speciem in spirituali, ita ego pono quod corporale est causa partialis ad causandum intellectionem in spirituali."

<sup>185</sup> *In II Sent.*, 275-6; see also 268f.

<sup>186</sup> *In II Sent.*, 276. See also Day, *Intuitive Cognition*, 192-94. The principle of economy, which plays a central role in Ockham's critique of species, was already used by Henry of Ghent (cf. ch. III, § 3.2), and by Aureol, see supra § 2.2; for its presence in Duns, see Day, *Intuitive Cognition*, 189.

<sup>187</sup> For a refutation of the immateriality argument, cf. also *In I Sent.*, (*Ordinatio*), d. 35, q. 1, *Opera theologica*, vol. IV, 426-27, where Ockham implicitly charges Thomas' cognitive psychology of inconsistency. Thomas asserted that the soul connected to the body can attain more perfect knowledge than the separate soul, but contemporarily views the material character of sensible things as an obstacle towards their intelligibility. This argument is unfair to Thomas. The greater perfection of the knowledge attainable by the embodied soul principally concerns the wider range of objects available to it, rather than the ways in which these objects are known. For the immateriality argument in Scotus, see *Reportatio*, in *Opera omnia*, Paris 1639, ed. Wadding, vol. XI.1, f. 193a.

<sup>188</sup> An infinite regress presupposes the species to be an iconic image, viz. a fundamentally *known* principle; cf., in fact, his example of the statue of Hercules which has to be known in advance, if it is presumed to let us know Hercules.

<sup>189</sup> Cf. *In II Sent.*, 292: "Hoc patet, quia Commentator nunquam nominat speciem, sed semper ubi Philosophus dicit 'speciem', ipse nominat 'formam', et accipit formam pro intentione vel habitu." Cf. p. 308: "Unde ex dictis Commentatoris ibi patet quod non est species in intellectu, quia ibi enumerat intellectum quantum ad omnes dispositiones quas recipit. Unde enumerat intellectum agentem (...) Non autem nominat intellectum qui est species." Cf. Baconthorpe's view, and see also Tachau, *Vision and Certitude*, 132, note 83.

<sup>190</sup> See, for instance, Giles of Rome and the 14th-century Averroist masters of arts.

universal concept, but surely does not produce species<sup>191</sup>. Elsewhere, Ockham specifies that the abstraction of the agent intellect brings about either a universal concept, existing in an "esse obiectivo", or else intuitive or abstractive knowledge, existing "subiective" in the human mind<sup>192</sup>. Both intuition and abstraction are received by the possible intellect; but this does not entail, as Duns erroneously suggested, that the intellection as a mental act is produced before the possible intellect receives it<sup>193</sup>.

A semantic notion that is crucial to Ockham's understanding the relationship between sensible things and concepts highlights the paradigmatic turn in his epistemology: concepts *signify* external objects, and do not represent them<sup>194</sup>; no longer identified with pictorial entities, concepts are *signa*. For attaining higher-level knowledge of reality, the human mind is structurally compelled to use linguistic signs<sup>195</sup>, which in turn enable one to justify how cognitive acts relate to sensible objects without appealing to the mediation of similitudes arising from extra-mental reality<sup>196</sup>.

<sup>191</sup> *In II Sent.*, 304-305: "Et quando dicit [sc. Duns] quod intellectus agens facit universale in actu, verum est, quia facit quoddam esse fictum et producit quendam conceptum in esse obiectivo, qui terminat eius actum, qui tantum habet esse obiective et nullo modo subiective." This passage reflects Ockham's initial determination of the universal as having only an objective being; cf. *supra*.

<sup>192</sup> *In II Sent.*, 307: "(...) respondeo quod duplex est abstractio intellectus agentis. Una est causare intellectionem intuitivam vel abstractivam partialiter cum obiecto vel habitu, modo praedicto, quae intellectio est omnino abstracta a materia, quia immaterialis est in se et habet esse subiective in immateriali. Alia est abstractio per quam producit universale sive conceptum rei universalem in esse obiectivo, sicut alias dictum est." The conception of "esse obiectivum", which still presupposes some kind of mediation of the content of the intellectual act, will be abandoned by Ockham after the criticisms of Walter Chatton. The mature Ockham will analyze knowledge exclusively on the basis of objects and mental acts.

<sup>193</sup> *In II Sent.*, 306: "Non tamen oportet quod intellectio sit prius ab uno quam recipiatur in reliquo." Cf. also the criticisms formulated by Baconthorpe. However, one can hardly avoid the impression that Averroes suggested some kind of priority of the "intellecta facere" with respect to intellection; cf. *In De anima*, 495. See ch. I, § 3.3.

<sup>194</sup> A background element for Ockham's turn is the fact that nominalism encouraged the use of explanations in terms of a logic of relations, as opposed to the logic of substance and attribute. See A.C. Crombie, "The notion of species in medieval philosophy and science", in *Congrès (VI) International d'Histoire des Sciences*, Amsterdam 1950, 261-269.

<sup>195</sup> Cf. Ghisalberti, *Guglielmo di Ockham*, 78-80; Corvino, "La nozione di specie intelligibile", 158-59.

<sup>196</sup> *In II Sent.*, 309: knowledge itself is a similitude of the object. For a similar position, see Arnauld, who regards ideas as mental acts with representative content; for discussion, see ch. XIII, § 1.

The gist of Ockham's new paradigm is an (epistemo-)logical model of knowledge acquisition competing with an older account chiefly couched in terms of a (meta-)physical process. Knowledge of universals is based on the capability of isolating and accurately expressing into a *mental* language invariant aspects of sensible reality<sup>197</sup>. One of the major achievements of Ockham is the emphasis on the linguistic, and more specifically semantic aspects in knowledge acquisition and the processing of sensory information. But he clearly underrates the possible cognitive role of mechanisms inaccessible to conscious reflection, when he claims that the mind can generate concepts from a *direct* interaction with individual entities. More crucially, Ockham's position ultimately begs the very issue of the origin of our knowledge, since this mental capacity is a huge black box executing a complex cognitive process; advocates of the competing paradigm were at least trying to break it down into a number of smaller black boxes executing more narrowly characterized subprocesses.

### 3.2. *The reception of Ockham in England and France—John Buridan*

Ockham did not establish a school of Ockhamists<sup>198</sup>, nor did he succeed in displacing the species from accounts of cognition—as Tachau's extensive survey of epistemological developments in post-Ockhamist Oxford clearly shows<sup>199</sup>. John of Reading reacts promptly to Ockham's views, and defends Duns' theory of species<sup>200</sup> on the basis of arguments involving a reinterpretation of Aristotle, Augustine and Averroes<sup>201</sup>, and an appeal to Anselmus—

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<sup>197</sup> The issue of a mental language in Ockham is not discussed here. For a modern variant of this view, see J. Fodor, *The Language of Thought*, New York 1975. For a recent critical discussion of this concept, see H. Putnam, *Representation and Reality*, Cambridge (Ma.) 1988, p. 5f.

<sup>198</sup> For Ockham's rather modest influence on epistemological developments in England, see, in particular, W. J. Courtenay, "The reception of Ockham's thought in fourteenth-century England", in *From Ockham to Wyclif*, eds. A. Hudson & M. Wilks, Oxford 1987, 89-107; cf. also Hoffman, "Einige Bemerkungen", 125f.

<sup>199</sup> See *Vision and Certitude*, Part Three.

<sup>200</sup> Cf. "*Quaestio Ioannis de Reading de necessitate specierum intelligibilium defensio doctrinae Scoti*", ed. G. Gál, in *Franciscan Studies* 29(1969), 66-156; on this author, see Tachau, *Vision and Certitude*, 157f.

<sup>201</sup> For his interpretation of Averroes and Augustine as supporting the species doctrine, see pp. 98, 145-6; cf. also Tachau, *Vision and Certitude*, 73, and 96-102. Jandun

an authority frequently referred to by many other English authors<sup>202</sup>. Walter Chatton argues for the necessity of intelligible species<sup>203</sup>, and also the preaching friar Crathorn attaches obvious importance to the species<sup>204</sup>. Relatively unconcerned with terminological issues, Robert Holcot defends Ockham against, e.g., Dominicans such as Crathorn and Grafton, though firmly endorsing the necessity of species<sup>205</sup>.

Parisian discussions on Ockham's thought were confined to a number of interrelated issues. Indeed, a (pre-existing) critical attitude towards the species doctrine did not induce a more generalized commitment to Ockham's views<sup>206</sup>; conversely, a favorable reception of his ideas was not indissolubly related to the abandoning of intelligible species<sup>207</sup>.

Outstanding philosophers, such as Burley and Buridan, questioned Ockham's rejection of the species as mental representa-

and most of his Italian followers will accept the species doctrine as coherent with Averroes' teachings. Averroes' authority will become controversial with the rise of the School of Padua; cf. ch. VI, § 2-3.

<sup>202</sup> John of Reading, *Quaestio de necessitate specierum intelligibilium*, 103-104: *Monologion*, c. 9 and 62, in *Opera*, ed. Schmitt, vol. I, 25 and 72. John of Reading read the *Sentences* between 1319-1323. The authors reacting against William de la Mare's *Correctorium* mostly quoted *Monologion*, c. 33; cf. ch II, introduction and ch. III, § 2.4. For the role of Anselmus' thought in Roger Marston, cf. ch. III, § 4.3 and A. Daniels, "Anselmizität bei dem Oxforder Franziskaner Roger von Marston", in *Theologische Quartalschrift* 93(1911), 35-59. During the Spanish Scholasticism Anselm's authority is frequently invoked in controversies on the necessity of species.

<sup>203</sup> Cf. K. Tachau, "Walter Chatton on sensible and intelligible species", in *Rivista di storia della filosofia* 40(1985), 711-48 and, in particular, the edited text on pp. 742-8. On pp. 743-44, Chatton formulates six arguments for intelligible species: (1) like the senses, the intellect is incapable of generating its first act on its own; (2) intuitive intellection is distinct from first abstraction, and therefore cannot cause the latter; (3) the intellect's act cannot coincide with its content; (4) memory and (5) habit do not arise without species; (6) one remembers things that were not 'consciously' perceived. See also Tachau, *Vision and Certitude*, 198-202.

<sup>204</sup> Tachau, *Vision and Certitude*, 257.

<sup>205</sup> Cf. William J. Courtenay, "A revised text of Robert Holcot's Quodlibetal Dispute on whether God is able to know more than he knows", in *Archiv für Geschichte der Philosophie* 53(1971), 1-21, on p. 17; for discussion see Tachau, *Vision and Certitude*, 245-55.

<sup>206</sup> Michael of Massa is a case in point, examined, e.g., in W.J. Courtenay, "The reception of Ockham's thought at the University of Paris", in *Logique, ontologie et théologie au XIV<sup>e</sup> siècle. Preuve et raisons à l'université de Paris*, eds. Z. Kaluza & P. Vignaux, Paris 1984, 43-64, on p. 45.

<sup>207</sup> See, in general, Tachau, *Vision and Certitude*, Part Four.

tion<sup>208</sup>. John Buridan<sup>209</sup>, in an early version of his *De anima* commentary, states that ancient authors identified the species with the mental act<sup>210</sup>. Intellectual activity cannot be accounted for without presupposing the acquisition of species, for how would it ever be possible to distinguish between a knowing and an unknowing mind without proper species<sup>211</sup>?

Species were also defended by members of Buridan's school such as, for instance, Nicole Oresme<sup>212</sup>. Other authors, by contrast, such as Nicholas of Autrecourt<sup>213</sup> and John of Mirecourt<sup>214</sup>, developed an account of human knowledge dispensing with species, probably not influenced by Ockham's work.

<sup>208</sup> For Burley's position, see § 4.2.

<sup>209</sup> For discussion, see also *infra*.

<sup>210</sup> Ioannes Buridanus, *In tres libros de anima*, in *Quaestiones et decisiones physicales (...) Alberti de Saxoni (...) Buridani in Aristotelis (...)*, ed. Georgius Lokert, Paris 1518, XXVIv: "Opinio antiquorum fuit de ista quaestione non solum quod species intelligibilis esset idem cum actibus intelligendi: immo actus intelligendi sit idem cum ipsa anima & cum hoc habitus intellectuales." On Buridan's relation to Ockham, see T.K. Scott, jr, "Nicholas of Autrecourt, Buridan and Ockhamism", in *Journal of the History of Philosophy* 9(1971), 15-41. According to A. Maier, "Das Problem der «species in medio»", 446 and 450, it is significant that two of the greatest natural philosophers of the 14th century argued for the species. For a possible influence of Giles of Rome on Buridan, see *idem*, 451.

<sup>211</sup> *In tres libros de anima*, XXVIIra: "Et sic apparet quod propter res diversimode se habere, omni alio circumscripto, intellectus non deberet dici intelligens et non intelligens: igitur necessarium est, si intellectus debeat aliter et aliter denominari, quod hoc sit per aliquas res sibi inhaerentes, si debeat dici intelligens et non intelligens." See also ch. I, § 2 for the idea of an ancient opposition to the species. The Lokert edition has been recently reprinted in B. Patar, *Le Traité de l'ame de Jean Buridan [De prima lectura]*, Louvain-la-Neuve-Longueuil (Québec) 1991; for the passages quoted above, see pp. 688-690.

<sup>212</sup> See P. Marshall, "Parisan psychology in the mid-fourteenth century", in *Archives d'histoire doctrinale et littéraire du Moyen Age* 50(1983), 101-193, on pp. 147-48. Marshall has presented an edition of Oresme's *Quaestiones super libros Aristotelis de Anima*, as a doctoral dissertation, University of Cornell 1980.

<sup>213</sup> According to Tachau, *Vision*, 336-7, 349; Kuksewicz, "Criticism of Aristotelian psychology", 628. In Autrecourt's letters to Bernard of Arezzo and Egidius, one does not find the slightest trace of the species controversy; cf. Nicolaus von Autrecourt, *Briefe*, eds. R. Imbach & D. Perler, Hamburg 1988.

<sup>214</sup> John of Mirecourt read the *Sentences* in 1344-5 and 1345-6. He rejects the species doctrine with arguments similar to those of Ockham; see "Questioni ineditae di Giovanni di Mirecourt sulla conoscenza", ed. A. Franzinelli, in *Rivista di storia della filosofia* 13(1958), 319-40 and 415-49, on pp. 419-28: (1) the human soul does not have to receive any entities in order to know; (2) the ontological status of species cannot be established; (3) the species would inevitably become object and cause, thus giving rise to an infinite regress. Cf. also Maier, "Das Problem der «species in medio»", 445. John of Mirecourt eliminated also intellectual abstraction.

John Buridan<sup>215</sup>, a leading figure in the Faculty of Arts at the University of Paris in the 14th century, and one of the most influential authors in the second half of this century<sup>216</sup>, holds an original position in cognitive psychology. He adumbrates aspects of a more modern functionalist view when he states that the human soul is an undivided "potestas" characterized by various operations<sup>217</sup>. In addition to relinquishing the distinction between perceptual and intellectual operations, he emphasizes the unity of the agent and the possible intellect<sup>218</sup>.

Buridan is an unflinching supporter of intelligible species<sup>219</sup>; he contributes significantly to this doctrine in the early and final

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<sup>215</sup> Johannes Buridanus, 1292 Béthune (near Calais)—† after 1358; studies in Paris and obtains master of arts there around 1320; rector of the university in 1328 and again in 1340; from 1330 he studies Aristotelian natural philosophy; 1339-40, he is involved in the decision of the faculty of arts prohibiting the teaching of several of Ockham's theses. For more biographical information, see B. Patar, *Le Traité de l'âme de Jean Buridan*, 11\*-14\*. Buridan lectured on several occasions on the *De anima*; Patar, *o.c.*, 104\*-110\* reconstructs the chronology of his psychological writings as follows: 1333, first course of lectures; 1337, *Expositio* and *Quaestiones De anima* (*Prima lectura*); 1342, *Quaestiones*, Lokert edition (1518, see *supra*); 1348, *Expositio* and *Quaestiones* (*Secunda lectura*); 1354, *Expositio* (*Tertia lectura*); 1358, *Quaestiones* (*Tertia lectura*). The *Prima lectura* of *Expositio* and *Quaestiones* has been published by B. Patar, *o.c.* The *Tertia lectura* of his questions on *De anima*, III, was published by J. Zupko, *John Buridan's Philosophy of Mind: An Edition and Translation of Book III of his "Questions on Aristotle's De anima" (Third Redaction), with Commentary and Critical and Interpretative Essays*, Ph.D. Thesis, Cornell University 1989, 2 vols.

<sup>216</sup> He taught Albert of Saxony, Marsilius of Inghen, and Nicole Oresme; for his influence upon Blasius of Parma, see below.

<sup>217</sup> Cf. G. Federici Vescovini, *Studi*, 145-154. This conception will influence the psychology of Blasius of Parma; see Biagio Pelacani da Parma, *Quaestiones de anima*, ed. G. Federici Vescovini, Firenze 1974, pp. 86f and Federici Vescovini, *Studi*, 247-48.

<sup>218</sup> See *Expositio De anima*, ed. Patar, 141: "Unde eadem substantia secundum quod est in potentia ad recipiendum species rerum intelligibilium et intellectiones dicitur intellectus possibilis; et quando illa eadem substantia format intellectionem mediantibus illis speciebus, dicitur intellectus agens"; cf. *Quaestiones De anima*, III, q. 5, 430-431. See also *Quaestiones De anima* [*Tertia lectura*], ed. Zupko, 109. For his distinction between a divine and a human agent intellect, see *Quaestiones*, 427, and the Lokert edition of the *Quaestiones*, in Patar, *o.c.*, 685; see also *Quaestiones De anima* [*Tertia lectura*], ed. Zupko, 106, and, for discussion, pp. 563-564. A similar view was already advanced by Peckam, see ch. III, § 3.1. For discussion, see Patar, *o.c.*, 170\*-174\* and M.J.F.M. Hoenen, "Die Intellektlehre des Johannes Buridan—Ihre Quellen und historisch-doktrinären Bezüge", in *John Buridan*, eds. E.P. Bos and H.A. Krop, Nijmegen, 16 pp. (forthcoming).

<sup>219</sup> See *Expositio De anima*, cit., 132-134, and 148-49: the human soul receives intelligible species that make the assimilation of the cognitive object possible and which

versions of his *De anima* exposition—which explore the relationship between intelligible species, cognitive act, and intellectual habit, and the relationship between phantasm and intelligible species.

In the early version of this work, Buridan states that intellectual habit, intelligible species and cognitive act bring about a real change in the intellect; hence they do not coincide with the intellect<sup>220</sup>. Similarly, habit and act cannot be identified with one another, because sensory representations are needed only for preserving the latter<sup>221</sup>. In “quaestio” 10 of this early commentary on *De anima* III, Buridan addresses in more detail the relationship between these three components of intellectual knowledge. Initially, he remarks that the very distinction between these ingredients may be questioned, because the necessity of intelligible species cannot be convincingly argued for. For example, the species cannot be understood as preceding the mental act, for otherwise it would be the first known<sup>222</sup>. However, (1) species and habit persist, whereas the act does not; (2) one and the same species may occur in several acts; (3) a habit arises from repeated acts concerning the same object<sup>223</sup>. These observations prepare the ground for Buridan’s more precise analysis of these notions.

The species may be regarded as an image or similitude—more specifically, as “quaedam qualitas naturaliter repraesentativum ipsius obiecti”. The act is a “motus animae”, whereas the habit is viewed as directing the mind in its operation<sup>224</sup>. The terms “species”, “act” and “habit” jointly contribute to characterizing knowledge acquisition:

Patet igitur recapitulando quod eadem qualitas quae, dum acquiritur, vocatur actus intelligendi, et quando acquisita est et intellectus

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ground the intellect’s first act. See also the passage from the Lokert edition, quoted above.

<sup>220</sup> *Quaestiones De anima*, III, q. 9, 453: “Intellectus enim, cum intelligimus, mutatur, cum intellectio sit quaedam actio, et sit actio immanens; et non mutatur motu locali; igitur alteratione qua deperditur vel acquiritur aliqua qualitas quae est accidens distinctum ab intellectu.”

<sup>221</sup> *Quaestiones De anima*, I.c., 454: “(...) quamvis habitus non dependeat in conservari a phantasmatis, tamen actus considerandi et intelligendi dependet et in fieri et in conservari a phantasmatis.”

<sup>222</sup> *Quaestiones de anima*, III, q. 10, 456

<sup>223</sup> *Quaestiones de anima*, I.c., 457.

<sup>224</sup> *Quaestiones de anima*, 457.

non cognoscit nec intelligit per eam, vocatur species intelligibilis; sed quando est bene firmata in intellectu et est inclinativa intellectus, vocatur habitus.<sup>225</sup>

These terms signify the same thing, "alio tamen et alio modo se habentem"<sup>226</sup>. Remarkably, the species is regarded as an unconscious residue of the act, while its mediating function is left out of this picture. This omission may suggest an influence on Buridan of Peter Olivi, who vindicated the species as memory content only. However, Buridan's view is differently argued for. He disputes the view that intelligible species precede the act, on the ground that the intellect acquires the species actively interacting with perceptual capabilities. Olivi, in contrast, asserted that perception has no causal role in the mental act<sup>227</sup>. Let us notice in passing that Buridan's active acquisition of intelligible species is the basis for the further distinction between intellect and senses, viewed as passive receptacles of the incoming species.

Buridan attempts to account for the complex relations between representation, mental act, and the function of acquired notions in terms of a collection of intertwined cognitive processes and events. Intelligible species, no longer viewed as intermediary formal principles of intellective cognition, are acquired from sensory representations as unconscious effects of cognitive acts. After repeated exposures of the human mind to the same object, the acquired cognitive content—that is, the species—may engender an intellectual habit capable of affecting the course of subsequent mental operations.

The rejection of intelligible species preceding the cognitive act is possibly a reaction to Scotus' cognitive psychology. It also conflicts with Ockham's theory of knowledge acquisition, however, which is based solely on objects and mental acts. Buridan holds the more interesting view that each instance of knowledge acquisition takes place through a complex cognitive process segmented into various stages. He emphasizes that the various stages of this process all sig-

<sup>225</sup> *Quaestiones de anima*, 459.

<sup>226</sup> See also the Lokert edition, in Patar, *o.c.*, where on pp. 688-89 the identification of species and act is described as "opinio haeretica"; and cf. p. 690 for the distinction between species and act.

<sup>227</sup> Cf. ch. III, § 3.4. See also ch. III, § 2.2 for a first assimilation of intelligible species and actual knowledge.



nify the same ‘thing’, thereby rescuing the intrinsic unity of the mental act<sup>228</sup>.

In the later Third Lecture on *De anima*, Buridan’s view of species has undergone considerable change. In the fifteenth question on the third book, he addresses the problem of whether any intelligible species remain in the intellect after its act. He lists five arguments for a negative solution<sup>229</sup>, and then argues for the necessity of intelligible species<sup>230</sup>, distinguishing also—like in previous versions—between cognitive act, intellectual habit, and intelligible species<sup>231</sup>. His discussion then proceeds with an analysis of the epistemic role of intelligible species substantively differing from the view presented in his previous *De anima* commentaries: the species is now seen as a presupposition, rather than as an effect of the intellectual act. Also in this final *De anima* commentary, however, he rejects the notion of a species preceding the mental act, and specifies that the species is caused by an act of the phantasy or “cogitativa”, that is, the (mental) faculty enabling the mind to know sensed objects:

Voco autem hic speciem intelligibilem quae mediante sensu sit in organo phantasiae vel cogitativae, vel in intellectu, sine qua intellectus non potest primo intelligere res sensatas vel phantasias.<sup>232</sup>

The intelligible species plays a central role in the acquisition of knowledge, since it directs the mind to its first natural objects. In this sense, it may be viewed as “prima intellectio” or, more precisely, as a “dispositio alia prima illi primae intellectioni”. It is

<sup>228</sup> A similar approach to the analysis of the cognitive act recurs in early Renaissance Aristotelians. See the works of Achillini and Bacilieri, discussed in ch. VI, § 2.2-3, in vol. II (forthcoming).

<sup>229</sup> *Quaestiones de anima [Tertia lectura]*, ed. Zupko, 160-161: (1) sensible species are not stored, and thus the same must hold, by analogy, for intelligible ones; (2) postulating that intelligible species can be preserved without actual intellection seems contradictory; (3) it is impossible that the same cognitive power receives the species in order to know, and then preserves them without knowing; (4) the phantasms would become superfluous for repeating an intellection; (5) intelligible species arise, and thus they are bound to perish, which is impossible if they remain in the intellect.

<sup>230</sup> *Quaestiones de anima [Tertia lectura]*, 161-62: (1) without received species the intellect would remain unchanged after the cognitive act; (2) they are needed to form habits; (3) there is an intellectual memory.

<sup>231</sup> *Quaestiones de anima [Tertia lectura]*, 162-163.

<sup>232</sup> *Quaestiones de anima [Tertia lectura]*, 164.

exactly for this reason that the species cannot persist after actual intellection, neither in sensible capacities (because it would differ from actual intellection), nor in the intellect, since it cannot be detached from the cognitive act<sup>233</sup>. Thus, the species is a grounding element for the mind's act, identifiable with a sense-dependent disposition<sup>234</sup>, and mediating between perceptual capabilities and the mind. Notice that Buridan blurs the distinction between phantasm and intelligible species. Indeed, the phantasm can be regarded as "actualis apprehensio"; it is related to the intellect in the same way as the sensible species is related to the senses<sup>235</sup>. The intelligible species, in turn, is identified with the "phantastica apprehensio"<sup>236</sup>.

Buridan's position in his last *De anima* exposition has no analogues in the earlier history of the species controversy. With his original identification between the intelligible species and the phantasm as supreme act of the inner senses, Buridan provides a coherent account of Aristotle's "non sine phantasmate". As primary and simple apprehension, the phantasm is an intelligible species, because it directs the mind to its natural objects, that is, it predisposes the mind to primitive cognitive acts.

### 3.3. Thomas of Strasbourg

Thomas of Strasbourg<sup>237</sup>, an Augustinian master active during the 1340's and 50's, accepts the intelligible species under the influence

<sup>233</sup> *Quaestiones de anima [Tertia lectura]*, 166.

<sup>234</sup> See also *Quaestiones de anima [Tertia lectura]*, 168: "Et ponamus quod huiusmodi species nec est habitus intellectualis nec actualis intellectio, sed quod sit actus vel dispositio proveniens a sensibili mediante sensu, requisitus vel requisita in mente, et necessaria ad formationem primae intellectionis, scilicet quam aliquis potest formare non proveniente alia intellectione." For the intelligible species as disposition, see Jandun, discussed in § 4.2.

<sup>235</sup> *Quaestiones de anima [Tertia lectura]*, 169.

<sup>236</sup> *Quaestiones de anima [Tertia lectura]*, 170.

<sup>237</sup> Thomas de Argentina (OESA); lectures on the *Sentences* in Paris, 1335-37; general of the Order in Rheinland-Schwaben, 1343; general of the order from 1345 until his death in 1357. I have used the following edition of his commentary to the *Sentences*: Thomas ab Argentina, *Commentaria in IIII. libros Sententiarum*, Venetiis 1564. His psychological views are still referred to during the Second Scholasticism; see Franciscus Suarez, *Liber de anima*, in *Opera omnia*, t. III, Paris 1856, 722b and Franciscus Soares, *Cursus Philosophicus*, tomus III-IV, Conimbricæ 1651, 383.

of Giles of Rome<sup>238</sup>, and extensively argues for the need of a formal mediation in intellective cognition<sup>239</sup>. He provides an original contribution to the problem of formal mediation with arguments emphasizing the positive role of the agent intellect's activity towards sensory representations—an activity, however, that falls short of impressing anything upon phantasms<sup>240</sup>. A similar view of the agent intellect's cognitive role is advanced—and more convincingly argued for in his *De anima* commentary—by Alphonsus Vargas of Toledo<sup>241</sup>, another Augustinian Hermit contemporary of Thomas of Strasbourg.

Strasbourg regards the agent intellect as a natural agent, independent from the free will<sup>242</sup>. He criticizes the views advanced by Philoponus and by the Arabic philosophers, as well as those of contemporary authors (“moderni”) who reject any real distinction between agent and possible intellect<sup>243</sup>. The agent intellect is assigned the role of abstracting intelligible species, the necessity of which—as he argues elsewhere—derives from the following observations: (1) the (knowing) intellect is potential; (2) cognition rests on assimilation; (3) material things cannot move the intellect; (4) species are postulated by veritable authorities, such as Aristotle (“not the stone but its species is present in human soul”) and Pro-

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<sup>238</sup> The influence of Giles may be noticed also in his determination of the modalities in knowledge of substantial reality; cf. *Commentaria in III. libros Sententiarum*, II, dist. 3, q. 2, 140va: “Unde sufficit ad hoc, quod aliquid sit in intellectu, quod fuerit in sensu, vel in se, vel in suo simili: vel in suo effectu, vel in sua causa: sed phantasma causatum a specie accidentis, quae fuit in sensu, est causa speciei substantiae, quae est in intellectu: ergo species substantiae causaliter fuit in sensu.”

<sup>239</sup> As the position of Gregory clearly indicates, the acceptance of the species does not entail that the latter is viewed as formal principle mediating sensible reality in the intellect; see subsection 4.

<sup>240</sup> See for discussion, B. Lindner, *Die Erkenntnislehre des Thomas von Straßburg*, Münster 1930, 50–55.

<sup>241</sup> See *infra* for discussion.

<sup>242</sup> *Commentaria in III. libros Sententiarum*, II, dist. 24, q. 1, 174ra.

<sup>243</sup> See *Commentaria in II.*, 174rb. It is probable that Strasbourg's criticisms are most likely directed against Buridan; notice, however, that already Durandus and Olivi challenged the distinction between agent and possible intellect. For Buridan's position, see *supra*, subsection 2. Various authors, whose scholarly activity covered the first half of the 13th century, already tended to soften the sharp demarcation between agent and possible intellect; see ch. II, § 1.

clus<sup>244</sup>. The abstraction of intelligible species is a positive action, because the illumination of phantasms performed by the agent intellect is an “actio positiva”, that is, it differs from an “actio remotiva” or “sequestratio”<sup>245</sup>.

In the process of illumination by the agent intellect, nothing can be impressed upon the phantasms. Indeed, it is a basic tenet of Aristotelian physics that accidents cannot be shifted from one substrate to another. Moreover, a spiritual entity cannot be received by a material entity. But even granting this possibility, the impression received in the phantasm would necessarily become material and singular, thereby dissipating its efficacy. A spiritual agent can change a material subject only by a “motus localis”, and the latter is not to be ascribed to the agent intellect. These difficulties, ruling out the possibility of impressing a form in phantasms, lead Thomas of Strasbourg to the rather unsatisfactory conclusion that the positive character of the agent intellect’s action is merely due to its presence:

ad praesentiam tamen huiusmodi luminis species intelligibilis derivatur ab ipso phantasmate, quae species virtute predicti luminis perlustrata efficitur forma intellectus possibilis repraesentans obiectum, ut actu intelligibile.<sup>246</sup>

It is evident that Strasbourg’s main polemical target here is Godfrey’s restriction with regard to the operation of the agent intellect, introduced with the aim of preserving the spirituality of the intellect’s act. However, an internal tension arises between the claim that the agent intellect has a positive role to play and the arguments to the effect that the agent intellect cannot impress any spiritual form or disposition upon phantasms. In the end, Strasbourg’s resourceful manoeuvres between these obstacles bring him closer to Godfrey’s position than one would have expected from his initial claims.

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<sup>244</sup> Thomas refers to Proclus, prop. 77 [= *Elementatio theologica*, prop. 177]: “omnis intellectus plenitudo est specierum”; for a discussion of the role of Proclus translations in the species discussion, see ch. I, § 4.3.

<sup>245</sup> *Commentaria in II*, 174va-b. The doctrinal background for this criticism is the psychological and epistemological conceptions of authors such as Godfrey of Fontaines and Radulphus Brito; see ch. III, § 3.3 and 5.

<sup>246</sup> *Commentaria in II*, 175ra.

His case against Godfrey's identification of species and act is more convincing. Godfrey argued that intelligible species and cognitive act were nothing more than the undistinguishable effect of the same intelligible object<sup>247</sup>. Strasbourg, by contrast, is convinced that the cognitive act requires an intellect informed by the intelligible species, because the latter is a prerequisite for achieving a unity between mind and object. Just like matter may be determined by particular forms, so the intellect may be actualized by universal forms, that is, by "species repraesentantes rei intelligibilis quidditatem in universali ad intellectum". Thus, he asserts the possibility of distinguishing clearly between cognitive content and mental representation. Furthermore, he argues, if intellection is to be seen as an immanent act, then the (possible) intellect necessarily plays an active role in the production of this act; and finally, if this is the case, then the (possible) intellect must be informed, because the "actus intelligendi non procedit a nudo intellectu". This argument emphasizes the central role of the possible intellect, and implicitly points to the fact that the cognitive role of the agent intellect boils down to illuminating phantasms and abstracting intelligible species<sup>248</sup>. But the possible intellect also carries out discursive processes, and therefore it must effectively use previously acquired contents, which are made available by the intelligible species<sup>249</sup>. Crucial to this argument is a neat distinction between the mind's purely active but unknowing features, and the mind as a receptive, but potentially knowing faculty. The possible intellect carries out properly cognitive processes provided it is adequately informed by (unknown) mental representations.

Thomas of Strasbourg's views on agent intellect and intelligible species occupy an intermediate position between, on the one hand, the views of Thomas Aquinas, Giles of Rome and Duns Scotus, and, on the other hand, the cognitive psychology of Gregory of Rimini. Thomas of Strasbourg and Gregory are chiefly divided by their assessment of Ockham's psychology and epistemology, at

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<sup>247</sup> See *Commentaria in IIII*, dist. 50, q. 1, 205ra-va, where Thomas analyzes Godfrey's opposition in 13 points.

<sup>248</sup> In contrast, Alphonsus Vargas Toletanus will assign the production of the cognitive act to the active mind.

<sup>249</sup> *Commentaria in IIII*, dist. 50, q. 1, 205vb.

least insofar as the species doctrine is concerned. Indeed, Gregory works out a doctrine of species within the schemes of intuitive and abstractive knowledge developed by Ockham, whereas Strasbourg pays only marginal attention to Ockham's psychological views<sup>250</sup>.

### 3.4. Gregory of Rimini

A representative figure of the doctrinal line that attempts to reconcile the species with some of Ockham's teachings is the Augustinian Hermit Gregory of Rimini, who lectured in Paris during the 1340's<sup>251</sup>.

Rather critical towards Ockham's cognitive psychology as a whole, Gregory accepts his doctrine of the essential role of intuition in primary knowledge<sup>252</sup>, and distinguishes between direct intuition and mediate act both in sense perception and intellectual knowledge<sup>253</sup>. Intuitive knowledge is crucial for all types of knowledge, because mediate or abstractive cognition presupposes intuitive cognitive processes<sup>254</sup>. Mediate knowledge requires the presence of

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<sup>250</sup> Indeed, the last four arguments against a real distinction between species and act, seem to be derived from Ockham: (i) no species are required for the knowledge of a present object; (ii) the principle of parsimony; (iii) the species would hinder the mind's unity with the object; (iv) no species are needed for presenting an object to the human mind. However, Ockham's name is not explicitly mentioned, and Thomas suggests that he is still examining Godfrey's thought. Also in a contemporary author, such as Peter of Aquila, Ockham's criticisms of species are largely ignored; see § 1.2.

<sup>251</sup> Gregorius Ariminensis, ca. 1300—1358; studied in Italy (Bachelor ca. 1323), and in England; taught in Paris, Bologna, Padua, Perugia; returned to Paris, 1341–1351, where he read the *Sentences* between 1343–44; taught in Rimini, 1351–1356; elected prior general of the Augustinians in 1357. For more biographical data, see A. Zumkeller, "Die Augustinerschule des Mittelalters: Vertreter und philosophisch-theologische Lehre", 217–223. Rimini will exercise a strong influence upon later Scholasticism. An informative survey of the critical studies on Gregory can be found in V. Wendland, "Die Wissenschaftslehre Gregors von Rimini in der Diskussion", in *Gregorius von Rimini: Werk und Wirkung bis zur Reformation*, ed. H.A. Oberman, Berlin 1981, 241–300, on pp. 246–274. For discussion of the intelligible species in Gregory, cf. Corvino, "La nozione di specie intelligibile", 165–171; see also, L.D. Davis, "Knowledge according to Gregory of Rimini", in *New Scholasticism* 55(1981), 331–347.

<sup>252</sup> For Gregory's relation to Ockham's epistemology, see Tachau, *Vision and Certitude*, 357f; on pp. 263–64, Tachau isolates in Crathorn and Adam Wodeham Gregory's two main English sources.

<sup>253</sup> Gregorius Ariminensis, *Lectura super primum et secundum Sententiarum*, ed. A.D. Trapp & V. Marcolino, tomus I, Berlin-N.Y. 1981, *Super I*, dist. 3, q. 2, 378.

<sup>254</sup> *Super I*, dist. 3, q. 3, tomus I, 392 and 400: "abstractio universalis praesupponit priorem notitiam in intellectu". For the possible influence of Crathorn on this distinction, see Tachau, *Vision and Certitude*, 363. In at least three places, Rimini argues

mental contents in the soul<sup>255</sup>, that is, it occurs through species, since the contents left in the human mind by an act of direct knowledge are identified with the traditional species<sup>256</sup>. Thus, the species is not primarily a mediating principle, but is seen rather as the natural result of intuitive cognition<sup>257</sup>. The species are derived from the objects, and establish a connection between soul and reality. In this sense, they are data for higher-level, discursive knowledge based on previous acts of intuitive cognition.

An examination of the various meanings of the term “species” distinguished by Gregory—occurring in the sections of his commentary on the *Sentences* dealing with the question of whether angels and/or men know by means of species—is crucial for a proper understanding of his standpoint in this debate. First of all, “species” means the form in general, or every form that is “ratio cognoscendi aliam rem”. Thus, it may be viewed as “similitudo et imago rei cognitae et per quam res illa cognoscitur”, which remains (naturally) in the soul and allows the subject to recognize the thing it is the image and similitude of. Even after the soul ceases to know actually, the species is by its own nature capable of inducing knowledge of the associated thing. With regard to this functional role, the species is assimilated to the “actualis notitia”<sup>258</sup>. This does not mean, however, that Gregory identifies the species with the actual intellection *tout court*, as Godfrey and Brito did before him, and many Renaissance philosophers maintained at a later stage of the debate<sup>259</sup>. Gregory is primarily interested in species persisting in the human mind as nearly fixed mental contents<sup>260</sup>.

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against Ockham’s definition of intuitive cognition, charging it with circularity; see: *Super II*, dist. 7, q. 3, vol. V, 107 and 122; *Super I*, dist. 3, q. 1, a. 1, vol. I, 307.

<sup>255</sup> *Super I*, dist. 3, q. 3, 400 en 402. In this sense, a clear parallel with Olivi’s position can be noticed.

<sup>256</sup> *Super I*, dist. 3, q. 2, 378, and dist. 3, q. 3, 402.

<sup>257</sup> Already Albert the Great used the term “species” to indicate the result of mental activity, and Peter Olivi accepted the intelligible species only as mental act or memory content; cf. ch. II, § 2.1 and ch. III, § 3.4. For the distinction between cognition by species and intuition, see also *Super II*, dist. 7, q. 3, tomus V, 149f. See Corvino, “La nozione di specie intelligibili”, 171.

<sup>258</sup> *Super II*, dist. 7, q. 3, vol. V, 119.

<sup>259</sup> For the distinction between species and cognitive act, see *Super II*, l.c., 156. For Aureol’s position, see this chapter, § 2.3; for the position of Renaissance authors, such as Nifo, Achillini, Buccaferrea and others, cf. ch. VI-VII.

<sup>260</sup> Cf. *Super II*, l. c., 119: “Quarto modo sumitur specialiter et proprie, scilicet pro forma, quae est similitudo seu imago rei cognitae, manens naturaliter in anima, etiam

Another novel feature of Gregory's species-doctrine is the distinction between a "species recepta" and a "species ficta". Both arise in or after experience, but the "species recepta" presupposes some sort of contiguity with immediate experience, whereas the "species ficta" comes about only at a later stage<sup>261</sup>. The "species ficta" is distinguished from the concept, for the latter occurs only in intellectual cognition, whereas the "species ficta" may play a role also in sense perception<sup>262</sup>.

It is not surprising that Gregory, like many of his 13th-century friars, seeks support from Augustine for his idea of species<sup>263</sup>, which differs in evident and essential ways from the doctrines of Thomas and Duns Scotus, for example<sup>264</sup>. First of all, the species can be similitude of an individual or of a universal<sup>265</sup>. Like Ockham, Gregory holds that the specific abstraction taking place in mediated cognition concerns the presence of the objects, not their possible dematerialisation<sup>266</sup>. Therefore, the species persisting after the apprehension of an individual object establishes a relationship between the intellect and a singular entity. What would count as a paradoxical consequence of the species doctrine, in Thomas' and Ockham's views, is a central tenet of Gregory's theory: an abstracted species may represent sensible things in their individuality<sup>267</sup>. He even appeals to Averroes<sup>268</sup> in order to defend, against Aureol<sup>269</sup>, the possibility of knowing sensible reality *qua* singular.

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postquam anima desiit actualiter cognoscere, apta natura nata ducere animam in notitiam rei cuius ipsa est imago et similitudo"; see also p. 135 and *Super I*, dist. 3, q. 3, 390-92.

<sup>261</sup> *Super I*, dist. 3, q. 1, 359; with this *species ficta* Gregorius means something different from Ockham's doctrine of universals, although a certain influence cannot be totally excluded. See on this topic, Corvino, "La nozione di specie intelligibile", 168.

<sup>262</sup> *Super I*, dist. 3, q. 1, 363-4.

<sup>263</sup> Cf. *Super I*, l. c., 358 and 360.

<sup>264</sup> For Gregory's discussion of Scotus' species doctrine, see *Super II*, l. c., 141f.

<sup>265</sup> *Super I*, dist. 3, q. 1, 342 and 352.

<sup>266</sup> *Super I*, dist. 3, q. 3, 392.

<sup>267</sup> *Super I*, dist. 3, q. 1, 352: "Dico ergo quod, quamvis omnis species existens in intellectu sit abstracta ab omnibus illis condicionibus in essendo—quia scilicet nec est quanta extensive nec situm habet et sic de aliis condicionibus materialibus et corporalibus—non quaelibet tamen est sic abstracta in repraesentando, sed sicut per aliquam speciem inextensam et indivisibilem repraesentatur nobis res quanta et extensa quam etiam per intellectionem indivisibilem et inextensam intelligimus, sic per aliquas species rerum sensibilibus inextensas et ab omnibus condicionibus materialibus abstractas in esse singularia illa et cum suis condicionibus singularibus et materialibus



According to Gregory, the species is a content persisting in our memory as a result of an immediate cognition, which enables the soul to attain knowledge of an absent object—similar to the “*intentio intellecta*” or “*verbum mentis*”, that is, a concept. This characterization marks a radical departure from Aquinas’ view of species as an instrumental principle. Indeed, it is only as a primarily known mental content that the species can still be thought of as a medium<sup>270</sup>. This account reverses the order postulated for abstractive knowledge by traditional theories. Thomas as well as Ockham would have found totally incoherent the thesis that in abstractive knowledge the species is known immediately and before the absent thing it is supposed to represent. But according to Gregory, Thomas gave an inadequate characterization of the series of stages involved in intellectual knowledge, because the first known is the material singular<sup>271</sup>. And Ockham erroneously rejected the species, which are indispensable instruments of abstractive knowledge. His notion of intellectual habit is a poor substitute for the species; its sole purpose is to defer the problems addressed by the various species doctrines<sup>272</sup>. In contrast, the notion of species may be used to give a unified basis for a theory covering fundamental aspects of perception, memory, and abstractive thinking. In Gregory’s view, things can be known by phantasms or species only after an immediate knowledge of them has been attained<sup>273</sup>. Therefore, the species is

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intelligimus determinate.” This view will not be generally accepted until the second generation of Spanish schoolmen; cf. ch. X, § 1.

<sup>268</sup> Cf. *Super I*, l. c. 316-317.

<sup>269</sup> Cf. *Super I*, l. c., 320-21, and 345; see also *Super I*, dist. 3, q. 4, 394. For Gregory’s relation with Ockham and Aureol, see Tachau, *Vision and Certitude*, 357f.

<sup>270</sup> *Super I*, dist. 3, q. 1, 345: “*Nam species cognoscitur in se immediate, res vero non cognoscitur in se immediate sed in ipsa specie sive per speciem tamquam medium cognitum.*” As a matter of fact, this doctrine of the *known* species anticipates, in a certain sense, some modern versions of the representational view of mind; see Introduction and also ch.’s XI and XIII. On the differences with Aquinas, see also Wendland, “Die Wissenschaftslehre Gregors van Rimini in der Diskussion”, 257.

<sup>271</sup> *Super I*, dist. 3, q. 3, a. 2, 401; cf. p. 407.

<sup>272</sup> *Super I*, dist. 3, q. 2, 378-79; Gregory refers to Ockham also in *Super II*, l. c., 137, where he polemizes against his *In II Sent.*, q. 14-15. Hervaeus criticized Henry of Ghent with similar arguments; see § 1.3. Also in *Super II*, dist. 7, q. 3, add., vol. V, 102-104, Gregory argues against Ockham’s rejection of the species.

<sup>273</sup> *Super I*, dist. 3, q. 3, 402: “*Amplius cum, ut in praecedentibus est probatum, per nullam speciem receptam aliqua res cognosci possit quae non sit prius cognita in se, sequitur quod ante notitiam rei in phantasmate sit res ipsa singularis cognita in se ipsa; et cum notitia phantasmatis sit prior vel simul aut eadem cum notitia ipsius universalis*

first and foremost mnemonic content, that is, something the mind is directly aware of as distinct from the external reality it represents<sup>274</sup>, rather than the formal mediating principle of traditional species doctrines, operating mostly below the threshold of conscious thought.

Gregory's view of species meets some of the main objections against an unconscious, not primarily known mediating entity in intellectual cognition, as raised by Peter Olivi and Durandus, among others<sup>275</sup>. Indeed, his view entails that the human mind can have "direct" knowledge of instruments involved in the mechanisms of sensible perception and intellectual knowledge, even though their chief function is representational.

Like Olivi, Gregory endorses a basic feature of representational theories of mind, since he regards the species as some sort of intermediate object enabling the human mind to know absent objects. Olivi's claim that the species is mental content, however, can hardly be reconciled with his virulent criticism of mediating principles in human knowledge, whereas Gregory grounds knowledge upon intuition and coherently characterizes the result of this immediate act as species. Obviously, Gregory is not an abiding follower of Giles of Rome, the first master of his order. Gregory's work will exercise a strong influence on later Augustinian Hermits, such as Hugolinus of Orvieto, Peter of Ailly and Paul of Venice, on the Renaissance Aristotelian Pomponazzi, and on many other schoolmen<sup>276</sup>.

### 3.5. *Alphonsus Vargas of Toledo*

Alphonsus Vargas of Toledo, a friar of the Augustinian Hermits apparently not influenced by the work of his brother Gregory, is the last major representative of the 14th-century Aegidian school<sup>277</sup>. His

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secundum dicta istorum, ut probatum est, sequitur quod simpliciter primo cognitum sit ipsum singulare extra." Gregory's classification of knowledge is discussed by Tachau, *Vision and Certitude*, 359.

<sup>274</sup> *Super II*, l. c., 156.

<sup>275</sup> See for Olivi's and Durandus' positions ch. III, § 3.4 and this ch., § 2.1, respectively.

<sup>276</sup> See below, and ch. V, § 3.1 and ch. VII, § 1.1 in vol. II (forthcoming).

<sup>277</sup> Alphonsus Vargas Toletanus, ca. 1300—1366; studies in Paris; reads the *Sentences* in 1344-5; successively bishop of Badajoz (1353), Osma (1354), and in 1361

commentary on the *De anima* will be widely read during the Renaissance<sup>278</sup>. His noetics, notwithstanding a clear naturalistic slant, comes surprisingly close to the Neoplatonic position of Dietrich of Freiberg, and provides the conceptual framework for his analysis of the intelligible species, which he regards as being intimately related to the active features of the human mind.

Vargas provides a strict hierarchical picture of cognitive capacities. The possible intellect mediates between the soul and the agent intellect. The agent intellect, though rooted in the human soul<sup>279</sup>, is not a 'part' of it<sup>280</sup>. This assumption does not prevent Vargas from asserting that the agent intellect is the exclusive cause of our mental acts<sup>281</sup>. In view of these claims, is there still room for an effective causal role of intelligible species? Vargas' own answer is a rather surprising 'yes', hinging on his rejection of the form of innatism advocated, for instance, by James of Viterbo<sup>282</sup>. The content of our mental acts depends upon sensory representations. The latter, however, organized into physiological structures of the body, are incapable of informing the possible intellect. Therefore, the agent intellect must be causally responsible for the mental representations presenting cognitive contents to the mind. But what is, more precisely, the activity directed by the agent intellect towards the phantasms? This vexing question was addressed by most authors who discussed the problem of mental representation after Thomas' death. The distinguishing feature of Alphonsus' solution is the emphasis on a positive operation of the agent intellect towards sensory images<sup>283</sup>.

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archbishop of Sevilla; for a biographical sketch, see A. Zumkeller, "Die Augustiner-schule", 224-25.

<sup>278</sup> I have used the following edition: Alphonsus Toletanus, *In tres Aristotelis libros De anima subtilissimae quaestiones*, Vincentiae 1608; this commentary was also published in Florence (1477), Venice (1565, 1566), and Rome (1609).

<sup>279</sup> *In tres Aristotelis libros De anima*, 81a.

<sup>280</sup> *In De anima*, 83a: the agent intellect is distinguished *realiter* from the possible intellect, and is principally regarded as "lumen" or "habitus".

<sup>281</sup> *In De anima*, 81a.

<sup>282</sup> *In De anima*, 81b-82b.

<sup>283</sup> However, already the Carmelite John Baconthorpe held against Godfrey that the agent intellect is truly an agent, as opposed to a "removens prohibens", and yet that it does not impress anything positive on the object; cf. *In I Sent.*, prol., q. 2, a. 4. Vargas' position is also similar to that of the contemporary Augustinian Hermit Thomas of Strasbourg, who also espoused the theory of the positive action of the agent intellect

Vargas approaches this question by analyzing a claim that he attributes to Godfrey and Baconthorpe: the action of the agent intellect is merely “remotiva” or “sequestrativa”—as opposed to “positiva”—because its illumination concerns the quidditative essence of sensible things rather than their materiality. According to Vargas, these doctors presuppose, that the phantasm has two ‘faces’—a clear ‘face’ directed towards the agent intellect, and an obscure one connected with the phantasy; only with respect to the clear ‘face’ a sensory image is presumed to record the essence of a material thing, namely, a universal<sup>284</sup>. This opinion is contrasted by Vargas with three conclusions; taken together, these three conclusions contain the gist of his alternative solution.

Firstly, the agent intellect exercises a positive action towards the phantasm. Secondly, an illumination solely regarding the “quidditas” of a sensible object must also concern the object’s material conditions. Thirdly, what the phantasm represents by virtue of the agent intellect’s light cannot be a universal. The first conclusion is supported by the following claims. (1) A purely ‘removing’ illumination does not enable the phantasm to move the possible intellect. (2) If the phantasms cannot receive anything from the agent intellect, then one is forced to assume that they are capable on their own, as sensory images, of moving the possible intellect. Granted (3) that the agent intellect is an “agens per se”, then (4) it must produce a positive effect. To support his second conclusion, Alphonsus points out that the operation of the agent intellect must be regarded as ‘uniform’, that is, it must proceed as a natural activity, independently of any episodic intervention of the free will<sup>285</sup>. Moreover, the “quidditas” is intelligible per se, and thus does not need illumination. The third conclusion is supported by the observation that the phantasm does not represent the universal, unless one admits

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concerning the phantasms; see *supra*. The idea of the agent intellect’s positive action will return in Paul of Venice; see ch. V, § 3.1.

<sup>284</sup> *In De anima*, 85a. This conception seems to echo the doctrine of the two faces of the human soul, present in many early Franciscans; see J. Rohmer, “Sur la doctrine franciscaine des deux faces de l’ame”, in *Archives d’histoire doctrinale et littéraire du Moyen Age* 2(1927), 73-77; see, among others, also Avicenna, *Liber de anima*, I.5, and Augustine’s concept of a double “ratio”.

<sup>285</sup> Cf. already Henry of Ghent’s concern that if one accepted knowledge by way of species, then intellectual cognition would become a necessary, viz. physical process; cf. *Quodlibetum* V, q. 14, 259va, and ch. III, § 3.2.

that the phantasy is capable of grasping it. In addition, the universal results from the cognitive act; therefore, it cannot be a presupposition of it<sup>286</sup>. The last argument suggests that Alphonsus, in agreement with Duns Scotus, regards mental representation as a necessary condition for the act of cognition.

According to Alphonsus, cognition involves a hierarchically organized process regimenting, in addition to the productive and receptive features of the human mind, the various stages required for producing cognitive contents. He rejects the theories that dispense with mental representations, such as those advanced by Godfrey and Baconthorpe, which postulate more narrowly characterized cognitive objects 'hidden' in sensory representations. Alphonsus conceives of cognition chiefly in terms of a *production* of the human mind, rather than viewing it as the result of a progressive unveiling of physiologically embedded contents; the mind processes sensory images, rather than extracting something from them<sup>287</sup>. Only a positively illuminated, that is, substantively transformed, phantasm can produce intelligible species in the possible intellect. This mental representation is a necessary condition for the mental act, and thus precedes it:

Ulterius dico quòd phantasma sic illustratum, sic illuminatum causat in intellectu possibili speciem intelligibilem; non tamen actum intelligendi; talis nonne species intelligibilis praevenit omnem actum intelligendi.<sup>288</sup>

The phantasm can produce an immaterial species because, in addition to the transforming intervention of the agent intellect, it is affected by the immaterial character of the possible intellect which receives the species<sup>289</sup>. Alphonsus distinguishes sharply between the reception of the species and the actualisation of the intellect in the

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<sup>286</sup> *In De anima*, 85b-86a.

<sup>287</sup> *In De anima*, 86a: "Dico igitur quantum ad dubitationem, quòd intellectus agens aliquid imprimit ipsis phantasmatibus, scilicet, lumen quoddam."

<sup>288</sup> *In De anima*, 86a.

<sup>289</sup> *In De anima*, 86b. This is an evident application of the principle "omne quod recipitur, recipitur modo recipientis". According to Aquinas, intelligible species were individuated by the possible intellect, see: *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um and *Summa contra Gentiles*, II, c. 75, 1553. Hervaeus argued that the individuation of the species in the intellect did not jeopardize the possibility of representing universals; cf. *De intellectu et specie*, 152, 159 and 167.

cognitive act<sup>290</sup>. The latter is a "vital" operation, and thus requires a "principium naturale effectivum"<sup>291</sup>. The species is not such a principle:

Sed species non est hominis naturalis; cum talis species non sint in hominibus concreatae, sed acquisitae, ut suppono ad praesens.<sup>292</sup>

If the intelligible species were the effective principle of intellection, then our mental acts would depend in essential ways on sensory representations, because the latter are causally responsible for the species<sup>293</sup>. Moreover, from the standpoint of the hierarchy of perfection, the intelligible species is inferior to intellection, and therefore cannot be its effective cause<sup>294</sup>.

This argument is less than convincing, given Alphonsus' previous commitment to the claim that phantasms are capable of producing an immaterial mental representation. Yet, it is a clear indication of the way in which Alphonsus sets the active features of the mind before its representational capacities: a conflict between these two aspects is resolved in favour of the active features. He understands Aristotle's characterization of the agent intellect as "omnia facere" in a literal sense. Therefore, its activity is not restricted to the abstraction of species, but includes the production of the intellectual act as well<sup>295</sup>. In his cognitive psychology, the active features of the mind play a pivotal role in producing both mental representations and cognitive acts. The former type of activity involves a basic transformation of sensory images. This is a rather unusual view of the hierarchical relationship between sense perception and cognition, requiring an active interaction between conceptual capacities and the realm of sensible representations. Only this transformation of sensory information permits the transition to the level of mental representation, which is a necessary, albeit largely insufficient

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<sup>290</sup> This emphasize on the priority of the species over the mental act may be due to an influence of Duns Scotus.

<sup>291</sup> This neat distinction between species and intellectual act, produced by phantasm and agent intellect, respectively, is inspired by contemporary Averroism, in particular by Jandun, *Super De anima*, III, q. 17; cf. *infra*. The mental act as "actio vitalis" is a central tenet of later Scholastic psychology; cf. ch. X and XII.

<sup>292</sup> *In De anima*, 89b.

<sup>293</sup> This argument was already formulated in the beginning of the 14th century by John of Jandun, *Super libros De anima*, 308f; cf. *infra*.

<sup>294</sup> *In De anima*, 89b.

<sup>295</sup> *In De anima*, 89b-90a.

condition for apprehending the (represented) cognitive content. In fact, the effective grasp of cognitive contents depends upon the productive mind, a propulsive centre of mental activity, which cannot be identified with a "pars animae", and which is distinguished "realiter" from other psychological capabilities<sup>296</sup>.

### 3.6. After Gregory of Rimini

During the second half of the 14th century, the debate on intelligible species subsides into the background. There is nothing comparable to the attacks of Ockham, and the necessity of mental representations, whether seen as mediating principles or just as mnemonic contents, is generally accepted. Hugolinus of Orvieto<sup>297</sup>, the successor of Gregory of Rimini in Paris, defends the necessity of species. Considered as a faithful follower of Gregory, he shows a relative independence by assigning to the species an effective causal role in the production of cognitive acts<sup>298</sup>. Another follower of Gregory, John of Ripa<sup>299</sup>, expresses views on species that are somewhat closer to Scotus' doctrines. In fact, Ripa distinguishes the species

<sup>296</sup> *In De anima*, 92a. Under this respect, Alphonsus comes close to the views of Albert the Great and Dietrich of Freiberg.

<sup>297</sup> Hugolinus of Orvieto; reads the *Sentences* between 1344-57; definitive redaction by Simon of Cremona in 1365; according to A. Zumkeller, "Die Augustinerschule", 225-26, his commentary was widely read and influenced many Augustinian friars. Hugolinus openly polemizes with Ockham; cf. Corvino, "La nozione di specie intelligibile", 166.

<sup>298</sup> Hugolinus de Urbe Veteris, *Commentarius in quattuor libros Sententiarum*, tomus tertius, ed. W. Eckermann & V. Marcolino, Würzburg 1986, 254: "Sed intellectio non dependet nec fit immediate ab aliqua forma extensa, licet quandoque fiat a specie intelligibili. Illa est subiective in anima, illa est inextensa, illa est repraesentativa plurium simul, illa non dependet a re extra in conservari, illa non est alia et alia specificè propter varietatem organorum"; see also 259. The context of this discussion is an analysis of intentional causation, cf. 251f. For discussion of Hugolinus' position, see Corvino, "La nozione di specie intelligibile", 174f.

<sup>299</sup> Johannes de Ripa; Italian Franciscan theologian who taught various years at the university of Paris, probably between 1354-70; lectured on the *Sentences* in Paris, and published the comment to the first book in 1357; his *Determinationes* were written in 1358-59; in 1368 he was still in Paris. Paul of Venice wrote an *Abbreviatio* of his comment to the *Sentences*, recently published; see Paulus Venetus, *Super primum Sententiarum Johannis de Ripa Lecturae Abbreviatio, Prologus*, ed. Francis Ruello, Firenze 1980. For more biographical data, see A. Combes, "Présentation de Jean de Ripa", in *Archives d'histoire doctrinale et littéraire de Moyen Age* 23(1956), 145-242, on pp. 155-59. As an entry point to the chronology and character of Ripa's works, see Z. Kaluza, "La nature des écrits de Jean de Ripa", in *Traditio*, 43(1987), 257-98; for discussion, see also J. Coleman, "Jean de Ripa, O.F.M. and the Oxford Calculators", in *Mediaeval Studies* 37(1975), 130-159.

from the cognitive act insofar as the latter is conceived as "motus"<sup>300</sup>, and identifies them insofar as intellection is "actus" or "forma"<sup>301</sup>.

Ockham did not succeed in displacing the species from accounts of cognition. Yet, he had a significant impact on how later authors treated issues in cognitive psychology. We have already seen the effects of the Venerable Inceptor on Gregory of Rimini. And the same doctrinal attitude is adopted by Marsilius of Inghen: equally influenced by Ockham and Buridanus, he does not reject the species doctrine, but concentrates on other epistemological issues such as concept formation and the theory of propositions<sup>302</sup>. The most interesting contribution to the species debate by authors active during the second half of the 14th century is made by Peter of Ailly, whose approach to the species and to most other psychological issues is deeply influenced by Gregory of Rimini; Ailly attempts to reconcile the species doctrine with Ockham's views on the respective roles of intuitive and abstractive cognition. His views will be examined in the next chapter<sup>303</sup>.

#### § 4. LATIN AVERROISM, JOHN OF JANDUN AND HIS FIRST ITALIAN FOLLOWERS

The reflections on intelligible species by Averroist authors illustrate the impossibility of drawing sharp boundaries between doctrinal schools in the later Middle Ages<sup>304</sup>. The Averroistic reception of the

<sup>300</sup> See Scotus, *Ordinatio*, I, dist. 3, q. 1, 203, discussed in § 1.1.

<sup>301</sup> Jean de Ripa, *Determinationes*, ed. A. Combes, Paris 1957, 241. Cf. P. Vignaux, "La connaissance comme *apparentia* dans les *prologi quaestiones* de Jean de Ripa", in *Studi internazionali di Filosofia* 8(1976), 39-56, on pp. 42-44 concerning Jean's dependence on Gregory, and on p. 52 for his view on species.

<sup>302</sup> Marsilius of Inghen, ca. 1335/40 near Nijmegen—1396 Heidelberg; magister artium in Paris, 1362; studies divinity from 1366, there; rector in 1367 and 1371; in 1386 rector of the university of Heidelberg; 1396 magister theologiae, there. For Marsilius' positive attitude towards the species doctrine, see, *inter alia*, *Quaestiones super quattuor libros Sententiarum*, Strasbourg 1501, II, q. 6.

<sup>303</sup> See ch. V, § 1.1.

<sup>304</sup> In this connection, one has to recall that the work of Hervaeus Natalis, Agostino Trionfi and, in a certain sense, Alphonsus Toletanus (discussed in ch. III, § 3.5 and IV, § 1.3 and § 3.4) bears significant similarities to the views of the authors under discussion in this section. For a general characterization of 14th-century Averroism, see Kuksewicz, *De Siger de Brabant à Jacques de Plaisance*, 118-120; *idem*,



doctrine of intelligible species is marked by the view that species are impressed, or at least produced by perceptual faculties. A likely reason for this doctrinal option is the fact that a formal principle brought about by thoroughly human faculties is needed to ensure that human beings can be cognitively joined to a separate intellect. Indeed, Averroist cognitive psychology is bound to postulate links preserving the continuity of the causal chain from perception to knowledge: gaps in this causal chain would show that no effective co-operation occurs between sensible faculties and the unique intellect, and that the cognitive unity mentioned above is due exclusively to the latter. Such co-operation, however, was postulated by Averroes as a way of achieving an *intellectual* knowledge of sensible reality which deserves to be called *human* knowledge.

These observations add to the motives for identifying in the group of 14th-century Averroists the first philosophical school unconditionally endorsing a view of intelligible species as primarily stemming from sensory representational devices—a view rejected or only partially accepted by the post-Thomas generation of philosophers defending this formal principle against Augustinian criticisms<sup>305</sup>. However, though accepting intelligible species as impressed, Averroists do not apply a mechanical impression doctrine in the style of Roger Bacon. Their views on mental representation are better understood as a naturalistic appropriation of Thomistic cognitive psychology.

Averroist cognitive psychology is analyzed in this chapter without a preliminary discussion of ontological issues concerning the unique intellect. The reason for this approach is that the various views on intelligible species developed by medieval and Renaissance Averroist authors bear only loose connections to the ontological issues concerning possible and agent intellect. Indeed, the tensions between medieval and Renaissance Averroistic accounts of intelligible species are mainly due to competing overall interpretations of the

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“L'évolution de l'averroïsme latin au XIV<sup>e</sup> siècle”, in *Knowledge and the Sciences in Medieval Philosophy*, ed. R. Työriñoja and others, Helsinki 1990, 98-102.

<sup>305</sup> Duns Scotus accepts the impression terminology of the opponents, but he does not accept that the intelligible species is principally produced by perceptual faculties; cf. above § 1.1.

Commentator, and only rarely have a more specific origin in his noetics. medieval Averroists, such as Jandun, thought that intelligible species could be unproblematically merged with Averroes' view of knowledge acquisition. Renaissance authors undertook a profound revision of medieval interpretations of the Commentator, taking advantage of more sophisticated philological tools and new information on the history of Peripatetic psychology. This revision involved, in some significant cases, the rejection of intelligible species<sup>306</sup>. One has to notice, however, that the detailed style of argumentation of many 14th-century Averroists may be viewed as a prelude to the analytical way of interpreting Aristotle's psychology provided by many representatives of the School of Padua.

#### 4.1. *Ferrandus Hispanus and Thomas Wilton*

The cognitive psychology of Ferrandus Hispanus<sup>307</sup> is a representative example of the conceptual transition between the views of Giles of Rome and 14th-century Averroists. Indeed, in his work one finds the first traces of theoretical developments eventually leading to the views of Jandun on the production of intelligible species by phantasms. Ferrandus retains the traditional abstractive terminology<sup>308</sup>, but no longer speaks of an abstraction of intelligible species by the agent intellect—which, more generally, he deprives of any effective operation to perform. The gist of intellectual cognition is a “recipere intentiones rei”<sup>309</sup>. This reception requires only the pure presence of the agent intellect, which enables the phantasm to move the possible intellect<sup>310</sup>. This view is a natural development of a

<sup>306</sup> See ch. VI-VII.

<sup>307</sup> Z. Kuksewicz, “Ferrandus Hispanus’ *De specie intelligibili*”, in *Medioevo* 3(1977), 187-235, cf., in particular, 188-192. Ferrandus, Master of Arts and secular theologian, was active towards the end of the 13th and the beginning of the 14th century. For more bio-bibliographical data: A. Zimmermann, “Ein Averroist des späten 13. Jahrhunderts: Ferrandus de Hispania”, in *Archiv für Geschichte der Philosophie* 50(1968), 145-164.

<sup>308</sup> *De specie intelligibili*, 201.

<sup>309</sup> *De specie intelligibili*, 203.

<sup>310</sup> *De specie intelligibili*, 216: “Et ideo non videtur esse negandum ipsa phantasmata aliquam habere dispositionem vel habilitatem ad movere intellectum possibilem in praesentia intellectus agentis, quam in eius absentia non habent, supposito etiam quod intellectus possibilis esset summe dispositus. Hanc autem habilitatem seu dispositionem non intelligo <esse virtutem aliquam novam immersam ipsis phantasmatibus ab ipso intellectu agente nec generatam, sed intelligo> quod sit quaedam vigor vel

doctrinal line followed by many (anonymous) masters of arts, whose work was discussed in the previous chapter<sup>311</sup>. As Walter Burley's *De potentiis animae*<sup>312</sup> seems to indicate, the same doctrinal line was generally accepted at the beginning of the 14th century: the agent intellect enables the form present in the imagination to cause the "species intelligibilis" in the possible intellect. This species—insofar as received by the intellect—is identified by Ferrandus with the cognitive act<sup>313</sup>.

The work of Thomas Wilton, containing fundamental ambiguities on the Averroistic interpretation of Aristotelian psychology, provides—in *Quaestio disputata de anima intellectiva* and other psychological writings recently published by Senko—a more direct anticipation of Jandun's species-theory<sup>314</sup>. Wilton follows the path of other 14th-century masters of arts who emphasized the impor-

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potentia naturae intelligibilis existens in phantasmate ad agendum suam similitudinem ad praesentiam ipsius intellectus agentis, in qua actione ipsa natura per se non sufficeret absque praesentia ipsius intellectus agentis." Cf. pp. 208-209 directed against Avicenna, *Liber de anima*, V.5. See also the position of both Giles of Rome and Godfrey of Fontaines. According to J.M. Rist, *The Mind of Aristotle*, cit., 179-181, in Aristotle the presence of the active mind is sufficient for actualizing the intelligibles.

<sup>311</sup> See ch. III, § 2.

<sup>312</sup> See, subsection 2, *infra*.

<sup>313</sup> *De specie intelligibili*, 235: "Cum igitur quaeritur, utrum species intelligibilis et actio intelligendi differunt, dico quod si intelligitur per speciem intelligibilem speciem esse in intellectu, dico quod non differunt, immo sunt idem, ut iam patet. Si per speciem intelligibilem intelligatur species, quae nata est intelligi vel quae intellecta est, non tamen prout ipsa est recepta in intellectu, sed abstracta ab ista consideratione, sic dico quod differunt: Quia forma ipsa est unum ens secundum se consideratum, intelligere autem est actio quaedam, quae est informatio, et ita unum significatur per modum habitus, et alterum per modum fieri." See also the views of Peter Olivi, Walter Burley, and, in particular, Lefèvre d'Étaples; for the latter, cf. ch. VI, § 1.4.

<sup>314</sup> Thomas Wilton, *Quaestio disputata de anima intellectiva*, ed. W. Senko, in *Studia Mediewistyczne* (1964); in the same volume other works of Wilton are edited. Thomas Wilton was dean of the Faculty of Arts in Oxford from 1297 to 1299; later he studied also theology. According to Kuksewicz, *De Siger de Brabant à Jacques de Plaisance*, who on pp. 276-7 refers to the studies of W. Senko, Wilton wrote the Averroistically oriented *Quaestio de anima intellectiva* during the years 1315-16 at Paris. For more information on Wilton and this *Quaestio*, cf. Kuksewicz, *De Siger de Brabant à Jacques de Plaisance*, 176-191. Another representative of the same philosophical milieu is Anthony of Parma, professor at the Faculty of Arts in Paris after 1310, and author of a *Quaestio de intellectu possibili et agente* (ms. Vat. lat. 6768); for a discussion of his noetics and cognitive psychology, see Kuksewicz, *De Siger de Brabant*, 148-176.

tance of sensory representational devices in the production of mental representations<sup>315</sup>.

Wilton holds that Averroes provided the only philosophically sound interpretation of Aristotle's psychology<sup>316</sup>, but argues that this interpretation conflicts with Catholic faith and must therefore be rejected<sup>317</sup>. Furthermore, if one endorses the view that each individual has its own intellect, one is forced to conclude that the imagination produces an intelligible species which is singular in being and in *representing*:

Praeterea oportet concedere, quod species recepta in intellectu possibili sit singularis in essendo et numerata in diversis suppositis sicut species recepta in virtute sensitiva. (...) Credo, quod secundum opinionem veram concedenda est conclusio huius rationis, quantum concludere potest, scilicet quod species, quae causatur primo in intellectu possibili, sit singularis in essendo et in repraesentando, ita quod primum obiectum intellectus via generationis est singulare sensibile, licet universale sit primum eius obiectum, accipiendo primum pro appropriato seu proprio.<sup>318</sup>

The intelligible species, as an immaterial representation, transcends its origin in the sensory images; at the same time, however, this species is an outcome of the imagination, and thus can only represent singular things. Rather unusually, this immaterial singular representation is viewed as a necessary condition for the subsequent abstraction of the "quidditas rei", performed in the light of the agent intellect<sup>319</sup>.

<sup>315</sup> A similar attitude can be found in contemporary Averroists, such as Gilles d'Orléans and Jean de Goettingen; for discussion of their doctrinal positions, see Kuksewicz, *De Siger de Brabant*, 100f and 121f.

<sup>316</sup> See *Quaestio de anima intellectiva*, ed. Senko, ch. I-IV.

<sup>317</sup> *Quaestio de anima intellectiva*, ed. Senko, 111.

<sup>318</sup> *Quaestio de anima intellectiva*, ed. Senko, 113-114.

<sup>319</sup> See in the same edition of Senko: *An intellectus noster possit de duobus singularibus formare duo verba*, 119: "Et intelligo, quod sicut res extra singulariter gignit sui speciem in sensum exteriorem, sensus autem exterior in sensum communem, et sic ulterius in virtutem imaginativam, sic virtus imaginativa ulterius gignit speciem rei singularis in intellectum nostrum possibilem ita, quod prima immutatio intellectus possibilis est per speciem rei singularis. Quo modo autem intellectus devenit in cognitionem ulterius intelligendo per hunc modum? Intellectus in actu per speciem rei singularis, virtute luminis intellectus agentis illuminantis species existentes in intellectu possibili, in quo illud lumen recipitur subiective, non in virtute phantastica, nam sibi non proponitur aliquod lumen spirituale, ponit, rem repraesentatam sibi ut hic nunc considerare, nota ut hic et nunc, et abstrahere sic quiditatem a conditionibus individuantes, sed tota ista abstractio praesupponit speciem rei singularis intellectu a qua fit abstractio." For a similar position, see Paul of Venice, discussed in ch. V, § 3.1.

Clearly, the immediate doctrinal context of these views is the debate analyzed in the preceding chapter. Furthermore, Wilton's critical attitude towards fellow theologians manifests itself in the very selection of the topic of discussion: how is it possible that mental representations originating in sensory representational devices of the internal senses can ground the intellectual cognition of quidditative essences? Wilton advances a solution to this problem based on an immaterial mental representation of *singular* entities, which is nonetheless capable of grounding the cognitive grasp of the essence of material things. This approach will be adopted by many later schoolmen<sup>320</sup>.

#### 4.2. Walter Burley

A noteworthy independent epistemological position is put forward by Walter Burley, author of a wide variety of works including several commentaries on Aristotle, and an extremely popular *De vita et moribus philosophorum*<sup>321</sup>. Burley criticizes Ockham on various epistemological and logical questions<sup>322</sup>, and advances a theory of intelligible species possibly influenced by Duns Scotus<sup>323</sup>, and most likely taking into account the views of Thomas Wilton<sup>324</sup>. Like

<sup>320</sup> See ch. X and XII, in vol. II (forthcoming).

<sup>321</sup> Walter Burley was born ca. 1274-75, probably in Yorkshire; he died ca. 1346, in any case after 12 Jan. 1344; by 1301 Master of Arts and fellow of Merton College at Oxford; he arrived ca. 1310 in Paris, where he remained, with short interruptions, until 1327. *De vita et moribus philosophorum* was full of errors, but still quoted by Pico in his *Conclusiones*, and reprinted many times during the Renaissance.

<sup>322</sup> Cf. H. Shapiro, "A note on Walter Burley's exaggerated realism", in *Franciscan Studies* 20(1960), 205-214; P.V. Spade, "Some epistemological implications of the Burley-Ockham dispute", in *Franciscan Studies* 35(1975), 212-222. See also W.J. Courtenay, "The reception of Ockham's thought at the University of Paris", 44.

<sup>323</sup> It is sometimes asserted that Burley followed Duns' lectures in Paris together with Ockham in the period 1304-07; cf. *Dictionary of Scientific Biography*, vol. II, New York 1970, 374. Ch. Lohr, however, fixes the date of Burley's arrival in Paris around 1310; see "Medieval Latin Aristotle Commentaries G-I", *Traditio*, 24(1968), 171.

<sup>324</sup> It is more than probable that Burley was a pupil of Wilton; cf. Lohr, "Medieval Latin Aristotle Commentaries, G-I", 171. On Burley's presumed Averroism, see: A. Maier, "Ein unbeachteter Averroist des XIV. Jahrhunderts: Walter Burley", in *Medioevo e Rinascimento*. Scritti in onore di Bruno Nardi, Roma 1955, vol. II, 475-500; Maier is contradicted by M.J. Kitchel, "Walter Burley's doctrine of the soul: another view", in *Mediaeval Studies* 39(1977), 387-401; in turn, Kitchel is corrected by Z. Kuksewicz, "The problem of Walter Burley's Averroism", in *Studi sul XIV secolo*, Roma 1981, 341-77.

many Augustinian Hermits and contemporary Averroistic authors, in the unpublished treatise *De potentiis animae* he claims that phantasms play an indispensable role in the production of intelligible species<sup>325</sup>. Burley's fame in the Renaissance is due to his commentaries on Aristotle. In particular, he is mentioned in the intense dispute on intelligible species because of his analysis of Averroes' interpretation of *Physics*, VII, te./co. 20<sup>326</sup>.

Burley holds that Aristotle is simply expounding Plato's view when he examines the thesis of the intellect's inalterability in cognition<sup>327</sup>. And if Aristotle had been presenting his own ideas there, as Averroes erroneously suggested<sup>328</sup>, he would have claimed that this alleged inalterability concerns separate intellects only<sup>329</sup>. According to Averroes—so Burley argues—the intellectual soul does not acquire new knowledge. This process takes place only in individual human beings, whose intellectual knowledge depends on the separate intellect as well as on their perceptual and physiologically embedded capacities<sup>330</sup>. Burley emphasizes that Aristotle's 'true' position on this point envisages an effective alteration of the intellectual

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<sup>325</sup> M. Jean Kitchel, "The *De potentiis animae* of Walter Burley", in *Medieval Studies* 33(1971), 85-113, on p. 109: "Quoniam intellectus possibilis est virtus immaterialis, et quaelibet species existens in virtute fantastica representat objectum materialiter et sub conditionibus materialibus, ideo species existens in virtute fantastica de se non potest gignere speciem in intellectu possibili, sicut nec coloratum existens in tenebris potest movere visum. (...) sic ad hoc quod species existens in virtute fantastica gignat speciem in intellectu possibili requiritur quoddam lumen spirituale, et illud est lumen intellectus agentis." See also Agostino Trionfi, discussed in ch. III, § 3.5, for a similar position.

<sup>326</sup> On the three different commentaries to the *Physics* that Burley wrote, see R. Wood, "Walter Burley's *Physics* commentaries", in *Franciscan Studies* 44(1984), 275-327. Burley's last commentary (probably written between 1316-1337) was first published in Venice 1482, and reprinted several times during the Renaissance. I have used the following edition: Gualterius Burlaeus, *Super Aristotelis libros De Physica auscultatione lucidissima commentaria*, Venetiis 1589.

<sup>327</sup> For a recent discussion of this passage in Aristotle, cf. R. Heinaman, "Aristotle and the mind-body problem", in *Phronesis* 35(1990), 83-102, p. 86f.

<sup>328</sup> Cf. ch. I, § 3.3.

<sup>329</sup> Burley, *Super De Physicu*, col. 890.

<sup>330</sup> *Super De Physicu*, 891: "(...) & ipsa intelligentia dicitur esse alterata per accidens, non quia aliquam rem novam recipit per accidens, sed quia per alterationem corporis fit alteri scientia, quia haec est per accidens:"

soul—which is “forma corporis” and multiplied<sup>331</sup>—by the reception of intelligible species<sup>332</sup>.

Though he cannot be counted as an Averroist philosopher, Burley’s specific psychological interests will place him among the most frequently cited authorities of the post-Jandun generation of Averroists<sup>333</sup>. Burley’s controversial conclusion that Averroes’ interpretation eliminates *de facto* the intelligible species will be extensively discussed in Renaissance disputes on the necessity of the species<sup>334</sup>.

### 4.3. John of Jandun

John of Jandun<sup>335</sup> is probably the first Averroistic author to turn the intelligible species into an independent topic for philosophical re-

<sup>331</sup> *Super De Physicu*, 892.

<sup>332</sup> *Super De Physicu*, 891: “Quare secundum opinionem phyl. est dicendum quod scientia fit de novo in anima intellectiva tanquam res alia ab intellectu, & fit scientia de novo in anima: per hoc quia species intelligibiles abstractae per intellectum agentem recipiuntur in intellectu possibili de novo: ut patet tertio de anima, & ibidem dicitur quod intelligere est quoddam pati.”

<sup>333</sup> Cf. Z. Kuksewicz, “L’évolution de l’averroïsme latin”, in *Knowledge and the Sciences in Medieval Philosophy*, eds. R. Työrinoja and others, Helsinki 1990, 99-102.

<sup>334</sup> See ch. VI-VII, especially the discussion between Vernia, Achillini, Nifo, Pomponazzi, and Marcantonio Zimara.

<sup>335</sup> Johannes de Jandun, 1285/9—1328 Montalto; master of arts in Paris in 1310; by 1311 acquainted with Marsilius of Padua; 1316, magister and canon at the College of Navarra; great authority at the Faculty of Arts; fled to the court of Ludwig of Bavaria with Marsilius of Padua, 1326; 1328 appointed bishop of Ferrara by Ludwig, possibly also created doctor theologiae. For more biographical data, see Kuksewicz, *De Siger de Brabant*, 202-203. According to Kuksewicz, *o.c.*, on p. 276, Jandun begins his *De anima* commentary before the composition of the *Quaestio disputata de anima intellectiva* of Thomas Wilton (see above), but completes it only after having read this work, that is, *ca.* 1318. In fact, there are two different versions of his *De anima* commentary. The commentary on the third book is, however, practically identical in the two redactions; cf. A. Pacchi, “Note sul commento al *De anima* di Giovanni di Jandun”, in *Rivista critica di storia della filosofia* 13(1958), 372-383, on p. 374, note 3; M.C. Vitali & Z. Kuksewicz, “Note sur les deux rédactions des ‘Quaestiones de anima’ de Jean de Jandun”, in *Mediaevalia Philosophica Polonorum* 27(1984), 3-24. For discussion on Thomas Wilton’s influence on Jandun, see Ch. Ermatinger, “John of Jandun in his relations with arts masters and theologians”, in *Arts liberaux et philosophie au Moyen Age*, Paris 1969, 1173-1184, in particular on pp. 1183-4 concerning Jandun’s use of Wilton’s afore-named *Quaestio*; M.C. Vitali & Z. Kuksewicz, “Note sur les deux rédactions”, on p. 15 and also E. Jung-Palczewska, “Jean de Jandun, a-t-il affirmé la nature active de l’intellect possible?”, in *Mediaevalia Philosophica Polonorum* 27(1986), 15-20. Jandun was acquainted with Siger’s writings, cf. Kuksewicz, *De Siger de Brabant*, 215-6 on Siger’s *De anima intellectiva*; see also St. McClintock, *Perversity and Error. Studies on the ‘Averroist’ John of Jandun*, Bloomington 1955, 57. Other valuable studies on Jandun’s cognitive psychology are:

flection<sup>336</sup>. He argues that Averroes maintained the necessity of what is denoted by the term "species intelligibilis" though he never used this expression in his writings<sup>337</sup>. Jandun's work on mental representations focuses on the origin or production of intelligible species, and touches upon two other interesting issues: (i) the problem of the numerical relation between species and mental acts when intersubjectively shared knowledge of one and the same object is involved; (ii) the problem of how knowledge of substance can be attained on the basis of (accidental) species. The latter problem had previously been discussed by Richard of Middletown, Thomas Sutton, and others. Here, I examine first Jandun's more original and more significant contribution to the dispute on intelligible species, that is, his characterization of species as the outcome of co-operative efforts of the inner senses<sup>338</sup>.

Before discussing the roles of phantasm and agent intellect in bringing about the species, Jandun elaborates on the potentiality of the possible intellect, and claims that it strictly concerns the intelligible in act (as opposed to the "intelligibile in potentia")<sup>339</sup>. Clearly, he wants to preserve the ontological "thickness" of the possible intellect, which he characterizes elsewhere as "substantia actu ens per se subsistens"<sup>340</sup>. This postulate provides a crucial premise for arguing that the species are generated from the potential intellect:

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A. Pacchi, "Note sul commento al *De anima* di Giovanni di Jandun", II, in *Rivista critica di storia della filosofia* 14(1959), 437-457; and part III, in *idem*, 15(1960), 354-374; E.P. Mahoney, "John of Jandun and Agostino Nifo on human felicity", in *L'homme et son univers au Moyen Age*, ed. Ch. Wenin, Louvain-la-Neuve 1986, 465-477; *idem*, "Themes and problems in the psychology of John of Jandun", in *Studies in Medieval Philosophy*, ed. J.F. Wippel, Washington D.C. 1987, 273-288.

<sup>336</sup> He is not the first Averroist to reflect on the distinction between species and act, as Kuksewicz, *De Siger de Brabant*, 220 suggests; cf. ch. III, § 2.2. For discussion of the relation between species and mental act in Jandun, cf. *idem*, 220-226.

<sup>337</sup> In *Super libros De anima subtilissimae quaestiones*, Venetiis 1587, III, q. 15, on col. 300, Jandun observes that Averroes uses the expression "intellecta universalia"—e.g., in *In De anima*, III, co. 30—to refer, in effect, to intelligible species.

<sup>338</sup> I do not analyze here his *quaestio* 25 regarding the agent intellect, because most arguments concerning the relation between mental representations and sensory images discussed in this context are treated also in the other questions regarding the intelligible species. This *quaestio* will be resumed and commented at length by Taddheus of Parma; cf. subsection 4, *infra*.

<sup>339</sup> *Super libros De anima*, III, q. 4, 228 and 231; this will be later accepted by Taddheus of Parma, *Quaestiones de anima*, ed. S. Vanni Rovighi, Milano 1951, 12.

<sup>340</sup> *Super libros De anima*, III, q. 6, 248.



(...) species intelligibilis educitur de essentia intellectus. & sic si educitur de essentia intellectus, sequitur quod essentia intellectus est potentia, dico, quod species intelligibilis educitur de essentia intellectus principaliter, id est in ipsa essentia intellectus principaliter recipitur & generatur.<sup>341</sup>

The purely mental generation of intelligible species ensures that species and intellect are robustly connected to each other<sup>342</sup>. But the claim that intelligible species derive somehow from the potentiality of the possible intellect—though providing a shield for the ontological “thickness” of this faculty—is only a very general and rather unsatisfactory answer to the central question of how intellectual knowledge arises from sensible experience. According to Jandun, the phantasm contributes to the production of the intelligible species insofar as it ensures the concrete and individual character of human knowledge<sup>343</sup>. On this ground he rejects the claim advanced by authors such as Thomas and Scotus, to the effect that phantasms play a purely instrumental role<sup>344</sup>. Notice, moreover, that Jandun also rejects dispositional innatism, in the version formulated by Viterbo and others. Thus, at this stage, Jandun has given only a very incomplete sketch of his solution to the problem of how intelligible species originate. He has only claimed that the phantasm must play a crucial role in this process, without describing this role in any detail, however.

Intelligible species, Jandun states, are needed for full-fledged mental acts. He insists on a distinction between species and act, because only a species originating from sensible representations guarantees that the relation of the unique mind to mankind is real, and thus enables human beings to attain intellectual knowledge. The intelligible species connects two levels, or “ordines” as Averroes would have said<sup>345</sup>: originating in perceptual acts, the intelligible

<sup>341</sup> *Super libros De anima*, l.c., 256. For a similar view of the ontology of the possible intellect, see Theophrastus (ch. I, § 2), an anonymous 13th-century author discussed in ch. II, § 1.4, Godfrey (in ch. III, § 3.3.), Richard of Middletown (ch. III, § 4.2), Dietrich of Freiberg and Henry Bate (ch. III, § 5).

<sup>342</sup> *Super libros De anima*, III, q. 11, 285-87.

<sup>343</sup> *Super libros De anima*, III, q. 10, 281; see A. Pacchi, “Note sul commento al *De anima* di Giovanni di Jandun”, II, (1959), 444.

<sup>344</sup> Initially, this view was accepted by Jandun, cf. *Super libros De anima*, III, q. 2, 224, to be later rejected in q. 14, 295 and q. 16, 303.

<sup>345</sup> Cf. in this context the position of Anthony of Parma, who assigned to the intelligible species a twofold mode of being; cf. *Quaestio de intellectu possibili et agente*, f.

species must ground the objectivity of cognitive contents. In order to protect this rather fragile construction, Jandun excludes that the species can be identified with either the act<sup>346</sup> or the "intelligere", for otherwise sensory images would be immediate causes of intellectual conceiving<sup>347</sup>. In agreement with Duns, he states that the species necessarily precedes the intellectual act<sup>348</sup>, though not temporally so<sup>349</sup>. Thus, cognition is the final result of a multilayered causal process, involving a series of hierarchically organized activities of sensitive and cognitive capacities. Since these capacities are *essentially* connected to each other, removing one link in the chain would necessarily result in the connection of an inferior level to a non-contiguous superior level<sup>350</sup>. This is the very reason why the problem of the origin of the species was so difficult to solve: the respective causal roles of agent intellect and sensory images cannot be determined in a satisfactory way.

Jandun is perfectly aware of the gap between inner senses and the intellect, and thus postulates that two of the inner senses come into play simultaneously, to wit, a preserving inner sense, such as imagination or memory, and the "cogitativa"<sup>351</sup>. Jandun argues for this solution in the fifteenth question of his commentary on *De anima* III, devoted to an analysis of the role of phantasms in the

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163va: "Et isto modo intellexit Commentator cum dixit, quod intellectus unitur nobis per speciem intelligibilem, quae habet duplex esse: unum habet in intellectu, et aliud habet in imaginatione." (quoted in Kuksewicz, *De Siger de Brabant*, p. 267, note 76)

<sup>346</sup> *Super libros De anima*, q. 14, 294: "Sed contra hoc potest sufficienter argui, quia omnis actio & passio requirunt in subiecto recipiente aliquam formam, quae realiter est diversa ab utroque." The intellection arises in virtue of the operation of the agent intellect on the phantasm.

<sup>347</sup> *Super libros De anima*, l.c., 296-97; cf. q. 24, 360. For discussion of the proximate doctrinal background for the view that phantasms determine the possible intellect, cf. Kuksewicz, *De Siger de Brabant*, 223.

<sup>348</sup> *Super libros De anima*, III, q. 18, 311-17; see, in particular, 316-317: the intelligible species precedes the intellectual act as disposition; cf. *infra*.

<sup>349</sup> *Super libros De anima*, III, q. 14, 298.

<sup>350</sup> This argument will be used by other authors, cf. Alphonsus Vargas in § 3.4. In a certain sense, the problem is still present in modern cognitive psychology. For instance, J.J. Gibson, *The Ecological Approach to Visual Perception*, Boston 1979, excludes mental representations, and grounds our knowledge of universal features of reality in a direct "pickup of invariants" by the mind.

<sup>351</sup> For a general discussion of the inner senses in medieval philosophy, see H.A. Wolfson, "The internal senses in Latin, Arabic, and Hebrew philosophical texts", in idem, *Studies in the History of Philosophy and Religion*, vol. I, Cambridge 1973, 250-314.

production of intelligible species. He first examines two arguments for the claim that the phantasm cannot cause the species: (i) representational devices embedded in physiological structures cannot cause immaterial representations, and (ii) the phantasm does not fulfil the condition that the agent should contain the form of its effect “in actu”<sup>352</sup>. Postulating that the phantasm contains the intelligible species “virtualiter” meets the second argument, but has the undesired consequence that the phantasm *de facto* transcends the intellect<sup>353</sup>. It is equally unacceptable, however, to maintain that the possible intellect causes the intelligible species, since the former is merely supposed to receive the latter. Furthermore, the agent intellect cannot be the unique cause of the species, for otherwise sensory images would be superfluous. Every individual species requires a determinate cause. Thus, one is led back to the initial, and still unanswered question: how can the phantasm cause the intelligible species?

Jandun gives the following answer:

Species intelligibilis fit à specie existenti in Memorativa, vel imaginativa.<sup>354</sup>

He prepares the ground for this conclusion by sketching the general metaphysical conditions on which the phantasm is able to produce the intelligible species. Given two “*accidentia absoluta*”, one of them must be the cause of the other if (1) they are such that “*posito uno ponitur reliquum, et remoto removetur*”, (2) neither one is the “*subiectum*” of the other, and (3) they are not grounded in the same “*subiectum*”. Phantasm and intelligible species fulfil these conditions, *ergo*<sup>355</sup>.

Jandun proceeds to analyze the way in which inner senses contribute to bringing about the mental act. His idea is that the overall causal responsibility is distributed over the three inner senses, the specific causal role of each inner sense depending on its being either a preserving capability (imagination or memory) or a ‘know-

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<sup>352</sup> *Super libros De anima*, III, q. 15, 298.

<sup>353</sup> *Super libros De anima*, 299; in contrast, Giles of Rome and Godfrey of Fontaines postulated that the agent intellect contained the intelligible species “virtualiter” (see ch. III, § 2.3, and § 3.3).

<sup>354</sup> *Super libros De anima*, 299.

<sup>355</sup> *Super libros De anima*, 299-300.

ing' one (the "cogitativa"): imagination preserves sensible species, memory stores non-sensed properties and intentions, and the "cogitativa" grasps non-sensed intentions. Which inner sense is more immediately instrumental in bringing about the mental act? The "cogitativa" is undoubtedly the most perfect capacity, because it is conceived of as 'knowing'<sup>356</sup>. However, by virtue of this very feature—that is, its active nature—the "cogitativa" cannot 'sustain' species remaining in the intellect after the mental act. Another possibility, acceptable only on condition that species are eternal, is that remaining species sustain themselves. But this is absurd for types of representation originating in the sensory realm. Intelligible species remaining after intellection must be sustained by the retaining inner senses. Therefore, Jandun conjectures, species take their origin in one of the sensory preserving capacities of our soul<sup>357</sup>.

The 'knowing' inner sense does not sustain species, and yet it plays a significant role in the production of the mental act. Indeed, the "cogitativa" brings about a disposition preparing the intellect for the mental act, which, unlike the species originating in imagination or memory, vanishes after the act. For this reason, the "cogitativa" is needed for knowledge of both sensed and unsensed objects; imagination, by contrast, is required only for the former, and memory only for the latter type of objects<sup>358</sup>. Jandun's observations on a 'double' intelligible species indicate, however, that no sharper distinction between the contributions of preserving and knowing inner senses is assumed:

Et videtur, quod secundum hoc oportet differre, quod ad intellectionem eiusdem quidditatis; v.g. albidinis requiritur duplex species intelligibilis, quarum una est causata à forma albedinis existente in imaginativa humana, alia vero est causata ab actu virtutis cogitativae.<sup>359</sup>

The latter type of species is more perfect than the former, but it vanishes with the act of intellection, whereas the mnemonic species persists in order to preserve a connection between human being and

<sup>356</sup> *Super libros De anima*, 300: this is Aristotle's phantasy, according to Jandun.

<sup>357</sup> *Super libros De anima*, 301.

<sup>358</sup> *Super libros De anima*, 302.

<sup>359</sup> *Super libros De anima*, q. 16, 306. This view is accepted by James of Piacenza; cf. *infra* subsection 6.

the possible intellect<sup>360</sup>. In the next “quaestio”, Jandun speaks indifferently of *the* intelligible species as the receptive or dispositional principle of intellectual acts<sup>361</sup>, and distinguishes it from “scientia” and “habitus”<sup>362</sup>. It seems fair to conclude that Jandun’s ‘double’ intelligible species captures roles played by the same entity at two different stages of the mental act—namely, its realisation and its result as (intellectual) memory, science or habit.

The intelligible species of the “cogitativa” *induces* the intellect to its act. The actual production of the mental act, which pertains to the agent intellect, yields a species persisting in the possible intellect, and depending for its preservation upon imagination or (sensible) memory. Thus, the (primary) intelligible species, produced by the “cogitativa”, grounds the production of a cognitive content, whose persistence in the intellect as (an ancillary type of) intelligible species is ensured by the inner senses.

One of the peculiar ideas formulated at the beginning of the 15th question can now be accounted for—namely, the idea that the phantasm must be “nobilior” than the intellect, as it is capable of producing mental representations. According to Jandun, this comparison applies only to the sensory image as active entity, the product of which is merely received by the intellect<sup>363</sup>. The intellect, in addition to receiving from the phantasm, performs acts largely transcending the inner senses, however, such as judgment and syllogistic reasoning.

Jandun’s proposed solution to the other riddle, concerning phantasms causing immaterial effects, raises a new and truly formidable problem in its turn. Jandun concedes that phantasms, by virtue of the agent intellect, can cause immaterial effects. But how does the agent intellect contribute to this causal relationship? One may hold that the function of the phantasm is more than merely instrumental, but this does not entail that the phantasm is the “agens principale

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<sup>360</sup> *Super libros De anima*, 306.

<sup>361</sup> *Super libros De anima*, q. 17, 309, and 310: “(...) species intelligibilis est dispositio immediata super illas, quae remanet post actum intelligendi: (...) Ad aliam dico, quod species intelligibilis est praeparatio seu dispositio ad recipiendum intellectiorem.”

<sup>362</sup> *Super libros De anima*, q. 18, 312–316. For discussion of the relation between species and habit, see Kuksewicz, *De Siger de Brabant*, 224–226.

<sup>363</sup> *Super libros De anima*, q. 16, 303.

omnino" in the production of the species. One may also maintain, as Jandun seems to suggest, that sensory images are the only proximate cause of mental representations. However, without somehow bringing in the active mind, these claims do not suffice to fill the gap between sensitive capacities, representations, and intellective capabilities. Unfortunately, Jandun is unable to find a satisfactory solution to this problem. In the question devoted to the causal role of the agent intellect, he rejects the classical theories of "imprimendo", "removendo", or virtual contact, as well as the solution proposed by Thomas Wilton<sup>364</sup>. He claims that the phantasm is the immediate cause of the intelligible species, whereas the agent intellect is just an "agens remotum"<sup>365</sup>; but eventually Jandun acknowledges his inability to pinpoint the exact causal role of the agent intellect<sup>366</sup>.

Let us now briefly consider the remaining two issues examined by Jandun in connection with the intelligible species. In the tenth question of book III, Jandun asks whether the intellective acts by virtue of which different men grasp the same cognitive object are numerically different. During the Renaissance, this problem will be used by Agostino Nifo to argue that the doctrine of intelligible species is untenable<sup>367</sup>. Though realizing its role in arguments for the uniqueness of the intellect, Jandun rejects the thesis that the intellection of the same object by more than one individual can be grounded in the use of the same, numerically identical intelligible species<sup>368</sup>. His arguments rest on the sense-dependence of human

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<sup>364</sup> *Super libros De anima*, q. 24, 354-56; Wilton's construction—that is, the position developed in *Quaestio de anima intellectiva* (cf. subsection 1)—is discussed as one of "sociorum nostrorum" on cols. 355-6.

<sup>365</sup> *Super libros De anima*, 353-54; q. 25, 366.

<sup>366</sup> *Super libros De anima*, q. 24, 359: "Omnibus ergo consideratis confiteor ad praesens me nescire aliquam necessitatem huius conclusionis, quod intellectus agens efficiat speciem intelligibilem mediante phantasmate: & vere non apparet mihi quod intellectus agens habet aliquem modum causalitatis agentis super huiusmodi speciem una cum phantasmate." Cf. Kuksewicz, *De Siger de Brabant*, 221; St. McClintock, *Perversity and Error*, 64, asserts that the agent intellect actualizes species that are potentially in the phantasms, and thus does not account adequately for Jandun's acknowledged difficulties.

<sup>367</sup> See ch. VI, § 3.2.

<sup>368</sup> *Super libros de anima*, III, q. 10, col. 279: "Primo quia simile videtur esse iudicium de speciebus intelligibilibus, & de intellectionibus respectu unius obiecti, sed species intelligibiles, quibus Socrates intelligit lapidem, sunt eadem numero cum illa

knowledge, which obtains through a chain of non-eternal mental acts: no intellectual act grasping a perishable thing can be eternal, for otherwise both representing phantasms and represented things would be eternal. And since the knowledge of different individuals depends on (numerically) different phantasms<sup>369</sup>, the apprehension of a stone by two different men, for example, is the same only with respect to the effectively grasped intelligible content, that is, it is “privative” identical<sup>370</sup>. The question “Utrum intellectiones quibus diversi homines intelligant unum et idem intelligibile sive obiectum sint diversae intellectiones numero” is addressed also in an anonymous manuscript providing the basis for Taddheus’ discussion of the same issue<sup>371</sup>.

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qua Plato intelligit lapidem, ut videtur velle Commentator per hoc quod probat intellectum esse unum numero: quare etc. Et confirmatur ratione Commentator nam si species intelligibilis in me et in te est alia numero, tunc ab istis poterit abstrahi species intelligibilis una communis”; and 283-4: “Ad rationes alterius partis. Ad primam, nego quod species intelligibilis sit penitus una numero à phantasmate meo et tuo. Et ad auctoritatem Commentatoris dico quod ipse intelligit illa speciem esse eandem secundum subiectum, ita quod non diversa nec alia loco et subiecto. et per hoc voluit probare propositum principale, scilicet unitatem intellectus cum sit subiectum illius speciei: et illa est una subiecto quia intellectus est unus numero. (...) Ad aliam dicendum quod illa species est alia et alia per accidens. non quidem per aliquod accidens sibi existens sed per aliquod accidens extrinsecum, ad quod habet habitudinem, et à quo dependet & conservatur, scilicet phantasma aliud & aliud numero (...)” That the uniqueness of the intelligible species, through which more individuals of the same (classificatory) species are known, could be used as an argument for the uniqueness of the intellect was already suggested by Siger, *Quaestiones in tertium de anima*, q. 11, 34-35, who—citing Averroes, *In De anima*, III, comm. 31, 471—observes: “Unde, cum intellectus in potentia se habeat ad intentiones imaginatas, determinate respicit intentiones imaginatas hominum, eo quod omnes intentiones imaginatae hominum unius rationis sunt. Ideo intellectus unicus in omnibus est et secundum substantiam suam et secundum suam potestatem.” See also Wilton, *Quaestio disputata de anima intellectiva*, 93: if the intellect were not unique, the abstraction of intelligible species would involve an infinite regress; however, on pp. 114-115, Wilton observes that also in the case of multiple intellects an infinite regress can be avoided, on condition that one considers the first abstracted intelligible species as representing a singular entity.

<sup>369</sup> Cf. *Super libros De anima*, III, q. 10, 283-84, quoted above and see also q. 25, 361-62.

<sup>370</sup> *Super libros De anima*, q. 10, 279-282. Cf. already the view formulated by Anthony of Parma, who regarded the intelligible species *in se* as unique and safely stored in the possible intellect, but “respectu individuorum” as individual and perishable. See Kuksewicz, *De Siger de Brabant*, 165-166.

<sup>371</sup> Z. Kuksewicz, “Un texte intermédiaire entre Taddeo de Parme et Jean de Jandun?”, in *Mediaevalia Philosophica Polonorum* 27(1984), 25-63; cf. also Taddheus of Parma, *Quaestiones in tertium de anima*, ed. S. Vanni Rovighi, Milano 1951, “quaestio” VI, pp. 64-72.

Jandun also addresses the question whether the human mind knows substances by virtue of substantial or accidental species. He maintains that material substances can be known by virtue of species representing either their accidents or else their substantial nature. In this respect he revives Bacon's suggestions<sup>372</sup>, and implicitly dismisses the objections of his critics, such as Richard of Middletown and Thomas Sutton, who argued that the intelligible species can only communicate accidental properties of substantial reality because of their dependence on sensory representations. Jandun seems to be influenced, at least to a certain extent, by Giles' solution, postulating that the material substance communicates its species to external and inner senses, and that only suitably equipped cognitive capacities can grasp substantial essences on the basis of the species present in the inner senses<sup>373</sup>. However, his own solution is that the intellect knows the substance by a proper species, indirectly produced in the intellect by the (accidental) *operation* of the material substance:

Et secundum istum modum intelligitur verbum Aristotelis quod accidentia magnam partem conferunt ad cognoscendum quodquid est. hoc nonne pro tantum verum est, quia operatio propria substantiae, quae est quoddam accidens, faciens in intellectu suam speciem, praeparat intellectum ad speciem propriam substantiae, qua ulterius perficitur ad cognoscendum ipsam substantiam.<sup>374</sup>

Jandun's position on formal mediation in intellectual cognition occupies a central place in the history of this problem. Probably influenced by Giles of Rome with regard to the idea of intelligible species produced by sensory representational devices, he attempts to specify how the inner senses contribute to the acquisition and preservation of intellectual knowledge. His account of the relationship between imagination and "cogitativa" is undoubtedly convoluted, but it is a clear sign of the fact that he appreciates the complexity of the mechanisms underlying the generation of human knowledge. His main conclusion that the intelligible species—probably produced by the "cogitativa"—depend for their preservation upon the imagination, reflects his basic commitment to the view

<sup>372</sup> Cf. ch. II, § 2.3.

<sup>373</sup> See *De cognitione angelorum*, 81va-b; for discussion, cf. ch. III, § 2.3.

<sup>374</sup> *Super libros De anima*, q. 20, 324.



that conceptual knowledge is physiologically embedded. This commitment, in turn, leaves no room for a satisfactory account of the role of the agent intellect. But his analysis of the intelligible species as “dispositio” (produced by the “cogitativa”) and, alternatively, as bearer of content (preserved by memory), undoubtedly provides new conceptual tools for bridging the gap between the physical organism and the mind as intentional system.

#### 4.4. *Taddheus of Parma*

Taddheus of Parma, student of Jandun and *trait d'union* between the Parisian school and the early Italian Averroism, in his *Quaestiones de anima* follows the overall approach to psychology of his teacher<sup>375</sup>. Like many other authors before him, he states that the potential intellect is not void of all intelligibility, although he wishes to emphasize that the (intelligible) potentiality of this intellect is not innate<sup>376</sup>.

The intelligible species is viewed as a formal principle, distinguished from the mental act in the same way as “qualitas” is distinguished from “passio”<sup>377</sup>. On the basis of a subtle exegesis of Averroes’ texts, Taddheus defends the existence of the species in intellectual memory, implicitly showing that it cannot be rejected by ap-

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<sup>375</sup> A. Ghisalberti, *Le “Quaestiones de anima” attribuite a Matteo da Gubbio*, Milano 1981, 7: Taddheus lectures around 1318-21 at Bologna; on Taddheus, see also S. Vanni Rovighi, “La psicologia averroistica di Taddeo da Parma”, in *Rivista di filosofia neoscolastica* 23(1931), 504-517; idem, *Le Quaestiones de anima di Taddeo da Parma*, Milano 1951, “introduzione”; and Kuksewicz, *De Siger de Brabant*, 319, who discusses on pp. 335-336 Taddheus’ views on the distinction between species and act. For his use of Jandun’s *De anima* commentary, see M.C. Vitali, “Taddeo de Parme et les deux rédactions des *Quaestiones de Anima* de Jean de Jandun”, in *Medi-aevalia Philosophica Polonorum* 28(1987), 3-13.

<sup>376</sup> Cf. *Quaestiones de anima*, 12, 127-28, and 131. See, e.g., the views of Godfrey, Thomas Sutton, and Jandun.

<sup>377</sup> *Quaestiones*, 47 and 94-95, where he probably appeals—like Jandun, *Super libros De anima*, 294—to *Physics* III, 202b19-22: “To generalize, teaching is not the same as learning, or agency as patency, in the full sense, though they belong to the same subject, the motion.” John Buridan, *Quaestiones De anima [Prima Lectura]*, ed.cit., 459, quoted in § 3.2, described both mental act and intelligible species as qualities. The “passio-qualitas” distinction will return in James of Piacenza (see below). It is likely that this view played a role in discussions on the nature of the mental act (“actio” or “qualitas”) during the Second Scholasticism; see the position of Caietanus (discussed in ch. VII, § 2.1), ch. X and XII, in vol. II (forthcoming). Notice, that Scotus already characterized the sensible species as quality, in *Ordinatio*, I, dist. 3, pars 3, q. 1, 299.

pealing to Averroes' authority<sup>378</sup>. He does not accept the doctrine, wrongly attributed to Giles of Rome, that the intelligible species as principle of the intellection is formally and numerically one with the "species phantasiata"<sup>379</sup>. Like Jandun, he argues for the immediate production of intelligible species by phantasms, while the agent intellect is supposed to prompt the intellection<sup>380</sup>. In an extraordinarily long question, Taddheus analyzes the cognitive role of the agent intellect<sup>381</sup>. This issue, not directly related to the problem of intelligible species, serves as the context for Taddheus' reflections on the status and function of mental representations. Moreover, Taddheus' extended analysis of the agent intellect in many ways resembles arguments used in Renaissance disputes on intelligible species.

Taddheus formulates three objections against the view that the agent intellect is necessary: (a) there is no agent sense; (b) the agent intellect is causally inert with respect to both phantasm and possible intellect; (c) the (cognitive) object can independently move the possible intellect<sup>382</sup>. This is followed by a comprehensive discussion of previous views on this issue, beginning with an examination of three views dispensing with the agent intellect. The first opinion is attributed to Plato<sup>383</sup>. According to the second opinion, the agent and possible intellects are only two aspects of the same intellect, containing "idoneitates et aptitudines (...) moventes se ad actum". The latter are required to ensure the immanence of the intellectual act. This position—apparently merging the views of 13th-century

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<sup>378</sup> *Quaestiones*, 88-91. A similar attitude is already noticeable in Jandun; during the Renaissance the controversy about Averroes' alleged defence or rejection of the intelligible species will arise in explicit form. However, already Ockham questioned Averroes' supporting the species theory; see § 3.1.

<sup>379</sup> *Quaestiones*, 45-46; the editor refers to Giles of Rome, *De plurificatione intellectus*, quoted by B. Nardi, "Egidio Romano e l'averroismo", in *Rivista di storia della filosofia* 3(1948), 12. The text reported by Nardi does not regard, however, Giles' thought but only what is the only genuine interpretation of Averroes' psychology according to Giles. For an analysis of the relation between sensitive representations and intelligible species in Giles, see ch. III, § 2.3.

<sup>380</sup> *Quaestiones*, 95: "(...) pluritas potest esse a diversitate materiae et a diversitate agentium; sed species et intellectio sunt huiusmodi: nam immediate productivum speciei est phantasma, sed intellectionis propinquum effectivum est intellectus agens." See also pp. 98-100. On p. 163, Taddheus will change his mind; see *infra*.

<sup>381</sup> *Quaestio* XV, 124-172.

<sup>382</sup> *Quaestiones*, 124-126.

<sup>383</sup> *Quaestiones*, 126.

authors, such as William of Auvergne and John Peckam, with James of Viterbo's doctrine on the innate "aptitudines"—is rejected as being incompatible with Aristotle's and Averroes' teachings<sup>384</sup>. The third opinion is that of Durandus<sup>385</sup>.

Taddheus proceeds with a critical survey of arguments for the agent intellect. Some argue that the agent intellect enables the phantasm to move the possible intellect, that is: "(...) ut confortet phantasmata quadam confortatione, qua confortatione possint intellectum movere"<sup>386</sup>. Taddheus rejects this view, because the nature of the "confortatio" is unclear. Also Godfrey's view of a virtual contact between agent intellect and sensory image cannot be accepted, for it presupposes that the agent intellect is an accidental agent<sup>387</sup>. Taddheus is more sympathetic towards the sixth view, assigning to the active mind the role of a principal agent impressing a "praeparatio" or "dispositio" upon the phantasms, and characterizing the latter as instrumental agents<sup>388</sup>. This view, however, is not immune from criticism either: (1) one usually assumes that an instrumental agent bears no similarity to the effect, whereas the phantasm does; (2) one cannot decide whether the nature of the impressed disposition is intellectual or sensible; (3) an immaterial agent cannot be the principle of physical alteration. Proposed solutions to these problems involve, respectively, (*ad* 1) defining the phantasm as "agens instrumentale secundarium", (*ad* 2) presupposing that the sensory image moves the intellect "in virtute agentis spiritualis", and (*ad* 3) claiming that the alteration of the agent intellect, rather than being "corruptiva", is indeed "perfectiva"<sup>389</sup>. But two fundamental objections can still be raised: (i) an "agens aeternum" cannot produce anything new; (ii) if the disposition impressed by the agent intellect on the phantasms is necessarily the same for all phantasms, then, assuming the agent intellect to be unique, it follows that all sensory images cause the same intellection<sup>390</sup>. The seventh view, describing the activity of the agent intel-

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<sup>384</sup> *Quaestiones*, 127-129.

<sup>385</sup> *Quaestiones*, 132-139.

<sup>386</sup> *Quaestiones*, 139; this might be a reconstruction of Giles' position.

<sup>387</sup> *Quaestiones*, 139-41.

<sup>388</sup> *Quaestiones*, 143.

<sup>389</sup> *Quaestiones*, 144.

<sup>390</sup> *Quaestiones*, 144-45.

lect in terms of the relationship between the "artifex", the "exemplar" and the product<sup>391</sup>, is rejected because the metaphor does not apply to the relation between intellect and sensory images<sup>392</sup>. Finally, Taddheus presents an extensive summary of Jandun's view, including the latter's "doubts" and "solutions"<sup>393</sup>. This view, though "satis est subtilis et probabilis multum", cannot be accepted either, because it conflicts with Aristotle and the Commentator. Paradoxically, if the agent intellect is necessary only for the intellection, then the former would play no role whatsoever in the production of the latter:

Modo si intellectus agens esset solum necessarius propter intellectionem et non propter speciem, tunc cum universalia sint obiecta, et obiectum intellectus haberet speciem, utique causeret intellectionem sine intellectu agente.<sup>394</sup>

Here, Taddheus is implicitly departing from Jandun's position, who limited the activity of the agent intellect chiefly to the production of the mental act, and regarded the problem of its relation to sensory images in the production of the intelligible species as essentially unsolvable<sup>395</sup>. Taddheus, by contrast, holds that the agent intellect is necessarily involved in the production of intelligible species.

After this extensive critical survey of earlier work, Taddheus advances a rather disappointing solution:

Sic ergo causa propter quam est necessarium ponere intellectum agentem non est alia nisi quia quiditas et phantasma sunt materialia et non poterant esse moventia intellectum complete ad intellectionem et producendum speciem intelligibilem, et ideo ut ista sufficienter moveant intellectum datus est intellectus agens.<sup>396</sup>

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<sup>391</sup> *Quaestiones*, 145: "Sicut enim artifex per artem et exemplar facit effectum et tamen in exemplari nihil imprimitur nec corrumpitur, sic intellectus agens ducit intellectum possibilem in cognitionem quiditatis nihil in ipsum phantasma imprimendo, nec corrumpendo."

<sup>392</sup> *Quaestiones*, 145-46.

<sup>393</sup> *Quaestiones*, 146-163; Taddheus' discussion is based upon the "quaestio" XXIII of Book III, in *Super libros De anima*, 338-352. For Jandun's views on the role of the agent intellect, cf. *supra*.

<sup>394</sup> *Quaestiones*, 163.

<sup>395</sup> Therefore, it is unfair to Taddheus to conclude that he is nothing more than a compiler of Jandunian views, as Vanni Rovighi, "La psicologia averroistica di Taddeo da Parma", asserts on pp. 508 and 511.

<sup>396</sup> *Quaestiones*, 165-66.

Analogous to the relation between celestial intelligences and their respective bodies, the agent intellect provides sensory images with “operari”, rather than with being. For a full-fledged mental act both the agent intellect (as universal cause) and the phantasm (as particular and proximate agent) are needed. In this respect, one may compare them to fire and heat: the former is understood as “agens principale et remotum”, and the latter as “agens secundarium et propinquum”<sup>397</sup>. The phantasm is indeed an agent, albeit an ‘insufficient’ one<sup>398</sup> which stands in need of the agent intellect. This rather obscure statement does not clarify how the agent intellect can come to constitute an “aggregatum” with the phantasm—that is, how the agent intellect can be joined *qua* form to another agent, and how they can co-operate<sup>399</sup>.

Apparently dissatisfied with his own conclusions, Taddheus then describes in more detail how the agent intellect and the phantasms can cause, with their interaction, both the intelligible species as formal principle and the dependent mental act. Though conceding that the idea of identifying species and act deserves some credit, Taddheus seeks an alternative solution because (mental) representation and act are different from each other. The formal structure contained in sensory representational devices bears immediately on the

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<sup>397</sup> *Quaestiones*, 166, and 167: “Video enim quod caliditas ignis agit in materiam et illius actionis non est principium caliditas absolute, quia caliditas unde caliditas non potest calefacere agendo determinatum, ut dicit Commentator, et ideo ut hoc faciat requiruntur duo, scilicet forma ignis et caliditas determinata sub grado determinato, ita quod ibi sint duo agentia, unum principale, ut forma ignis, aliud secundarium, ut caliditas determinata, quae quidem caliditas non est agens instrumentale, cum tali agenti instrumentali non assimiletur effectus, caliditati autem assimilatur caliditas quae est quidam effectus, quia caliditas assimilatur sibi caliditatem ita quod agit, et hoc habet a forma, quae quidem forma sibi nihil imprimit sed solum quia est coniuncta loco et subiecto. Et sic in proposito: intellectus enim agens una cum phantasmate sic agit in intellectum possibilem quia intellectus agens est agens principale, sed remotum est, phantasma autem est agens secundarium et propinquum. Et ideo non oportet quod phantasmati aliquid imprimatur et removeatur ab intellectu agente, sed solum quia est sibi coniunctus loco et subiecto, ideo etc.” The co-operation between agent intellect and phantasms meets also the objection that the agent intellect cannot cause anything new; cf. p. 169. The metaphor of fire and heat played a constant role in Peripatetic discussions on cognitive psychology; see Alexander, *De intellectu*; Thomas Aquinas, *De potentia*, q. 9, a. 5, and *Summa theologiae*, I, q. 85, a. 2; cf. also Giles of Rome, *De cognitione angelorum*, 81va-b, and Agostino Trionfi, *Opusculum de cognitione animae*, II, c. 5, Dii<sup>v</sup>-iii<sup>r</sup> regarding the knowledge of substantial reality on the basis of species representing accidents; for discussion, see ch. III, § 2.3.

<sup>398</sup> *Quaestiones*, 171.

<sup>399</sup> *Quaestiones*, 168-69.

production of a higher-order representation, and consequently leads to the mental act:

Forma enim est causa intellectionis et speciei intelligibilis; tamen immediate est causa speciei, et illa immediatio dicit privationem alterius causae, et non dicit privationem ordinis temporis, ita quod phantasma naturaliter prius producit speciem et ex consequenti intellectionem. Sic ergo phantasma non producit intellectionem nisi mediante specie; non quod species intelligibilis sit causa intellectionis, sed quia fantasma producit principaliter speciem quam intellectionem, quia ordine naturae hoc habet esse.<sup>400</sup>

Taddheus claims that the production of the species is logically prior to the intellection, and that the synergy between intellect and sensory image explains how an eternal cause may produce a new act. However, also Taddheus fails to give a detailed account of how the active mind operates on the phantasm<sup>401</sup>; he does not go beyond the claim that the co-operative effort of these two agents must be explained in terms of an “aggregatum” of form and matter. The major friction with Jandun occurs just at the point where Taddheus’ construction shows its essential limitations.

It was Taddheus who introduced Jandun’s thought with its new philosophical themes and style in Italy. His cognitive psychology focuses on the problem of how the mind processes sensory information, involving a strict synergy between agent intellect and phantasms, conjoined into an “aggregatum” of form and matter. Thus, the problem of the elaboration of perceptual representations is replaced by a new, but equally intractable metaphysical problem. Some earlier authors viewed the agent intellect as the form of the possible intellect<sup>402</sup>, but—to the best of my knowledge—this is the first time that the active mind is boldly identified with the form of sensory representations. Of particular interest is Taddheus’ characterization of mental act and representation as “passio” and “qualitas”, respectively<sup>403</sup>. This view of the mental act indicates that

<sup>400</sup> *Quaestiones*, 169.

<sup>401</sup> *Quaestiones*, 170: “Dico quod necessarius est propter phantasmata non quod agat in eis aliquod imprimendo aut ab eis aliquid abstrahendo sed ut simul cum ipso phantasmate agat speciem intelligibilem et intellectionem quia neutrum est secundum se sufficiens ad agendum.”

<sup>402</sup> See the positions of Albert, in ch. II, § 2.1, and Dietrich, in ch. III, § 5.2.

<sup>403</sup> See *Quaestiones*, 47 and 94-95; for discussion, *supra*.

intellection is an effective alteration of mind, whereas the related characterization of representations brings forth his definite commitment to physicalism in the philosophy of mind.

#### 4.5. *Matthew of Gubbio*

Matthew of Gubbio<sup>404</sup> falls squarely within the doctrinal tradition initiated by Jandun, and yet is rather critical of the work of Jandun and Taddheus. In his commentary on *De anima*, he pays hardly any attention to the problem of intelligible species, enigmatically observing that the intelligible species can be identified with the mental act. The species, however, is essentially produced by the object, whereas the mental act derives from the agent intellect<sup>405</sup>. The role of the agent intellect is examined elsewhere<sup>406</sup>. A “quaestio” published by Kuksewicz shows that Matthew does not accept an approach to the problem of how intelligible species are produced in terms of perspectivist optics.

According to Matthew, an immediate knowledge of the species as medium<sup>407</sup> presupposes that the species moves “organice”. In

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<sup>404</sup> Matthew of Gubbio was master of arts at the University of Bologna between 1333-47; for biographical data, see also Kuksewicz, *De Siger de Brabant*, 346f. For the chronological relation between Matthew's and James of Piacenza's commentaries (the latter discussed in subsection 6), see Anna Alichniewicz, “Matthew of Gubbio's ‘Commentary on *De anima*’ and its date”, in *Mediaevalia Philosophica Polonorum* 28(1986), 21-25.

<sup>405</sup> *Quaestiones de anima*, ed. A. Ghisalberti, cit., 134: “(...) species intelligibilis et actus intelligendi sunt idem; conceditur. Et tu dicis: ergo species sensibilis et actus sentiendi erunt idem. Nego: quia actus intelligendi producitur ab intellectu agente, sed species intelligendi a fantasmate vel ab idolo excogitato”; cf. pp. 173-74. The same expression regarding the intelligible species as produced “ex idolo excogitato” is to be found in James of Piacenza; see *infra*. See also Averroisme bolonais au XIVe siècle, ed. Z. Kuksewicz, Wrocław-Varsovie-Cracovie 1965, “Utrum cogitativa sit reflexiva supra suam essentiam vel supra suam actum”, 293-94, where Gubbio emphasizes the link of species with the essence of things. For the essential identity of representation and act, see *idem*, 308-309.

<sup>406</sup> In “Utrum sit dare intellectum agentem”, in Kuksewicz, *Averroisme bolonais au XIVe siècle*, 296-305, Gubbio analyzes the role of the agent intellect. Like Taddheus, he starts with the refutation of a long series of predecessors. He shows that the agent intellect cannot impress anything upon phantasms (297-98). Then he discusses Taddheus' opinion on pp. 298-301, attacking in particular the possibility of a distinction between the production of species and mental act by the agent intellect. Eventually, he formulates his own position referring to Averroes: the agent intellect transfers sensory representations (the intentions of the imagination) from one order to another, i.e. from material to spiritual being.

<sup>407</sup> “Utrum species vel imago, que est organum mediante quo aliqua res cognoscitur, (...) cognoscitur”, in *Averroisme bolonais*, cit.

such a case, however, the object remains unknown, because the impressed species necessarily become the first known, eclipsing the proper cognitive object. Matthew denies that the species or phantasms can determine our intellect "impressive", or even "cognitive", for they move our intellect "delative", that is to say, the intelligible species reveals the associated thing "sicut effectus defert causam"<sup>408</sup>. This 'delivering' motion attributed to the species regards, in addition to sensory images, the production of intelligible species by the species present in the "cogitativa":

Ut ultra dicis: postea species existens in cogitativa producet speciem in intellectu. Verum est, non quia moveat intellectum cognitive, sed solum delative, sicut non videbas species et ymagines existens in aere, nisi solum delative.<sup>409</sup>

Matthew insists on excluding any 'real moving' from the cognitive order<sup>410</sup>. His proposal that the species moves "delative", insufficiently detailed and inadequately argued for, boils down to a mere terminological shift. However, his contribution is marked by a definite opposition against the impression doctrine, which evidently was no longer uniformly accepted by 14th-century Averroistic masters of arts. Although he does not adequately account for the cooperation between sensory images and active features of the mind in the production of mental representations and acts, Matthew's work deserves attention for its partial departure from the physicalist categorial frame dominating psychological accounts since the rise of perspectivistic optics. In this respect, he makes a significant contribution when he points out that a widely shared view of impressed species entails the unwelcome consequence that species are primarily known as the first object.

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<sup>408</sup> "Utrum species vel imago, que est organum mediante quo aliqua res cognoscitur, (...) cognoscitur", in *Averroïsme bolonais*, 309: "Ideo est sextus et ultimus modus dicendi, et est magistri Mathei de Eugubio, et est, quod ista species seu fantasma movet intellectum solum delative, non autem impressive nec cognitive, et loquor quando mediante ea intellectus intelligit obiectum extra illam speciem. (...) sicut effectus defert causam."

<sup>409</sup> See *Averroïsme bolonais*, 310.

<sup>410</sup> *Averroïsme bolonais*, 305, where he appeals to Averroes, *In De anima*, III, c. 18; cf. also *Quaestiones de anima*, cit., 173-74.



#### 4.6. *James of Piacenza*

James of Piacenza<sup>411</sup> is another representative of the doctrinal approach initiated by Jandun. He emphasizes the need for a real distinction between species and cognitive act; like many other authors, he examines the nature and function of intelligible species within the context of a discussion on the agent intellect's cognitive role.

By appeal to Averroes' authority, James endorses the thesis that the agent intellect transfers the species "de ordine in ordinem", although he disavows the view that the same species can be transmitted from one subject to another, and that it can thus be received by different faculties. Rather, the transfer of species must be understood as a production by sensible images "in quolibet virtute", that is, in virtue of the agent intellect's light<sup>412</sup>. The production of the species does not require two 'stages', as Wilton and Jandun suggested. Possibly aiming at a finer characterization of the respective contributions of phantasm and agent intellect, James claims that the intelligible species is caused "ab obiecto et idolo excogitato", but requires the presence of the agent intellect as a necessary condition for its production<sup>413</sup>. However, James' conceptual construction blurs the distinction between illuminated phantasm and intelligible species<sup>414</sup>.

The agent intellect's "presence" is viewed as an illumination, for nothing is impressed upon phantasms. James emphasizes the 'non-impressing' character of this mental activity—implicitly appealing to a well-known distinction in species-discussions since Albert and some early 14th-century authors<sup>415</sup>—when he states that the illu-

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<sup>411</sup> James of Piacenza taught at the University of Bologna between 1340-1347; see Kuksewicz, *De Siger de Brabant à Jacques de Plaisance*, 353f; and Jacques de Plaisance, *Quaestiones super tertium de anima*, ed. Z. Kuksewicz, Wrocław-Varsovie-Cracovie 1967, introduction, 21-22. For discussion, see also: Kuksewicz, *De Siger de Brabant à Jacques de Plaisance*, 379-83; idem, "Le commentaire du *De anima* d'un averroïste bolonais, Jacobus de Placentia", in *Rivista di filosofia neoscolastica* 55(1963), 1-20, on p. 15. Like Jandun and Taddheus before him, James polemizes explicitly with Giles of Rome; see for discussion, Kuksewicz, "Le commentaire du *De anima* d'un averroïste bolonais, Jacobus de Placentia", 6.

<sup>412</sup> *Quaestiones*, q. 6, 87-88; see also p. 90.

<sup>413</sup> *Quaestiones*, 88-89. See also Matthew's position, *supra*.

<sup>414</sup> See also Kuksewicz, "Le commentaire", 12.

<sup>415</sup> *Quaestiones*, 89: "Et non est inconveniens, quia licet subiective nihil recipit, tamen obiective aliquid recipit." Albert held that the intellectual soul was to be viewed

mination is received "objective" rather than "subjective". Phantasms become "actu moventes"—that is, they acquire the capacity of actualizing the possible intellect—solely in virtue of the 'non-subjectively' received light of the agent intellect. But then species become superfluous, at least in the sense that they can be identified with a sort of actualized phantasm<sup>416</sup>: an illuminated phantasm can cause the intellective act without the mediation of intelligible species. Elsewhere, however, James emphasizes that the distinction between species and intellective act is essential, thus recognizing the necessity of intelligible species that are not identifiable with (illuminated) phantasms<sup>417</sup>.

James distinguishes between intelligible species and intellective act on the basis of a distinction between their respective causes—that is, the phantasm and the agent intellect. He states that the species is "qualitas" and the intellective act is "passio", thereby suggesting that they are distinguished as (representation of) mental content and as effective alteration of the mind<sup>418</sup>. Their unity is also emphasized when he asserts that species and act come about simul-

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as "locus specierum", not as "subiectum"; see ch. II, § 2.1. The concept of "esse obiektivum" is developed by James of Ascoli, Hervaeus and others; cf. § 1.5 and § 2-3. The early Ockham, for instance, attributes to cognitive objects in the mind a merely "objective existence", excluding by consequence the need for species. In his *Lectura super III de anima*, in the afore mentioned edition, James refers to this distinction on p. 262: "Nota, quod lapis est in anima obiective, sed species lapidis est in anima subiective, licet non formaliter, ergo etc." For the 'subjective' presence of intelligible species in the human mind, see also Hugolinus de Urbe Veteris, *Commentarius in quatuor libros Sententiarum*, tomus tertius, ed. W. Eckermann & V. Marcolino, Würzburg 1986, 254, quoted in § 3.5, and Thomas Wilton, *Quaestio disputata de anima intellectiva*, quoted in subsection 1. This distinction will be intensely discussed during Renaissance disputes concerning the presence of species and cognitive contents in our soul; cf., inter alia, the positions of Agostino Nifo, Marcantonio Zimara, Caietanus, and Sylvester of Ferrara.

<sup>416</sup> *Quaestiones*, 89: "Si autem intelligitur secundo modo, sic dico, quod est verum in hunc modum, quia intellectus agens existens praesens phantasmati, prius non potuit movere intellectum, sed fuit in potentia ad movendum intellectum possibilem. (...) sic similiter est de intellectu agente, quia per praesentiam suam facit ut phantasmata, quae prius fuerunt in potentia ad movendum intellectum possibilem, facit ut actu causant intellectionem movendo intellectum possibilem."

<sup>417</sup> See *Quaestiones*, q. 9, pp. 99-111. Cf. pp. 100-102 for thirteen arguments against the distinction; roughly speaking, the potentiality of the possible intellect and its disposition to receive the intellectual act constitute the backbone of these arguments.

<sup>418</sup> *Quaestiones*, q. 9, 103. The same distinction can be found in Taddheus, *Quaestiones*, 95

taneously<sup>419</sup>. Indeed, the intelligible species precedes the mental act only “secundum naturam”, since it is needed for the mental act to be received in the possible intellect<sup>420</sup>. Naturally, the advocated temporal simultaneity of species and act is instrumental in defending the internal coherence of the cognitive act. However, since both species and act are to be viewed as *received*, the distinction between mental representations and acts becomes really thin<sup>421</sup>.

Piacenza’s views reflect fundamental tensions in the role of intelligible species in the production of intellectual acts: their function is virtually indistinguishable from that of illuminated phantasms, which are generally supposed to actualize the possible intellect. A viable solution to this difficulty may be assimilating intelligible species and mental acts. This is unacceptable to James, however, because he holds that the intelligible species differs from the intellect: the former is caused by the sensible object and representation, whereas the generation of the latter is due to the agent intellect<sup>422</sup>. These internal tensions stem from the very programme of coordinating, within the conceptual framework adopted by Jandun, the respective contributions to knowledge acquisition provided by sensory representations (essential to cognitive contents) and the active (namely, productive) features of the mind.

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<sup>419</sup> *Quaestiones*, q. 6, 88: “Et haec positio est verissima, quia propter hoc ponitur intellectus agens, quia species intelligibilis et actus intelligendi, quae sunt in intellectu, realiter differunt, quia species intelligibilis producitur ab obiecto et idolo excogitato, actus autem intelligendi producitur ab intellectu agente in eodem instanti temporis, quo producitur species intelligibilis.” See also, p. 103f. However, on p. 89, James will, implicitly blur this distinction, attributing again the causal responsibility for intellection to the illuminated phantasm; see also below.

<sup>420</sup> *Quaestiones*, 104: “Ad evidentiam huius quaestionis est notandum, quod species intelligibilis praecedit actum intelligendi in intellectu possibili secundum naturam et actus intelligendi recipitur in intellectu possibili mediante specie intelligibili.”

<sup>421</sup> Taddheus does not amalgamate species and act so thoroughly as James does; see *supra*.

<sup>422</sup> See the contradictions between *Quaestiones*, q. 6, p. 88 and p. 89.

## § 5. CONCLUSION

The doctrine of intelligible species suggests a solution to the problem of knowledge acquisition by postulating the need for a formal mediation of sensible reality in the immaterial intellect. An information-bearing representation (intelligible species) grounds the effective grasp of the cognitive content (mental act): the human mind does not know the species, but directly apprehends its content.

The 14th-century disputes record a wide variety of views on intelligible species. This does not mean that the issue of a formal mediation was invariably perceived as an urgent philosophical problem. Indeed, some authors defending the intelligible species do not endorse the necessity of a formal mediation in knowledge acquisition; analogously, many critics of the species do not relinquish formal mediating principles.

Intelligible species and formal mediation are jointly and unconditionally accepted by a small number of authors, including (perhaps even limitatively) Duns Scotus, Thomas of Strasbourg, Alphonsus Vargas, and the Averroists. Within this limited group, however, there is no consensus regarding the relation between mental representation and cognitive act. Scotus argues for the need of a formal integration of sensory information *prior* to the grasp of the universal. Strasbourg states that the cognitive act requires an intellect informed by the intelligible species: intellection is an immanent act, and thus the (possible) intellect must actively contribute to producing it; such an active role, however, can be played only by an intellect which has been informed (by a species). Vargas' plea for intelligible species is closely related to his arguments for a mental processing of sensory information. Finally, Averroists are unable to reconcile the roles of sensory representations and active mind in producing both intelligible species and mental acts.

Critics of the species form an equally heterogeneous group. For example, Durandus' arguments against species and agent intellect ban the possibility of all formal mediation, while Baconthorpe is prepared to retain mental representations if they are assimilated to cognitive acts. Ockham dispenses with the species, and develops new ways of explaining knowledge acquisition. A variety of 'intermediate' positions resist straightforward classification. For ex-

ample, early Thomists, such as Hervaeus and Thomas Sutton, cast doubt on the instrumental character of the species as an intermediary representation, and partially assent to objections *de facto* undermining the validity of a formal mediation. Though criticizing received species, Aureol recognizes with his doctrine of 'specular forms' that a formal mediation is needed, and thus acknowledges the significance of the epistemological problem addressed by the species doctrine. Gregory of Rimini plays down the role of species, grounding the primary acquisition of knowledge in intuition, and understanding species chiefly in terms of memory contents. Roughly speaking, Gregory holds that the mind has direct access to cognitive contents that are committed to memory as representations.

The 14th-century controversies on the issue of intelligible species—marked by lively exchange and mutual influences between Franciscans, Dominicans, Averroists, and Augustinian Hermits—show that it is misleading to speak schematically of a conflict of ideas between doctrinal schools. Staunch defenders and vigorous opponents of the species can be found among Dominicans as well as Franciscans. Quite remarkably, the psychological views of Duns Scotus and his disciples are heavily influenced by Aquinas, while the Dominican Durandus fuels the criticisms formulated by Olivi. Furthermore, one may detect doctrinal affinities on the generation of intelligible species between some Augustinian Hermits—Giles of Rome and Vargas Toletanus, for example—and the Averroist school. One has to keep in mind, however, that the arguments used to defend species by one participant in the debate are only rarely endorsed by other authors. Indeed, the (defensive) strategies may vary considerably, according to the author's choice of context for discussing this psychological issue. Duns Scotus, for instance, would never have accepted Jandun's arguments, nor does Gregory blindly follow Aquinas' and Scotus' teachings.

In the Franciscan order, one finds more coherent accounts of conceptions inherited from the 13th-century Minors. Duns' defence of the necessity of intelligible species, for example, replaces the inconclusive psychological arguments of Matthew of Aquasparta and

Roger Marston. Ockham's new comprehensive framework for cognitive psychology overcomes some of the problematic implications of the objections raised by Olivi and Aureol. The 'orthodox' Dominicans, by contrast, being quite faithful to Thomas' teachings, seem unable to make any progress on the problems left unsolved by Aquinas.

Augustinian Hermits typically frame their views on intelligible species in connection with the psychological ideas of Giles of Rome, the first influential master of this order. Some of them, such as Gregory of Rimini, find new productive suggestions in Olivi and Ockham, while others, such as Alfonsus Vargas, discuss the issue of intelligible species within a categorical framework influenced by Averroistic ideas. Characteristic features of the psychological views advanced by Augustinian Hermits will reappear in the works of Paul of Venice and, through his influence, in those of various members of the School of Padua.

Jandun places the intelligible species among the central notions of Averroist cognitive psychology. His views will strongly influence later generations. In fact, although specific claims are often criticized by his students, Jandun embeds the issue of intelligible species into an overall conceptual framework accepted by most Italian masters of arts, at least until new approaches to Aristotelian cognitive psychology developed in Northern Italy during the last decades of the 15th century<sup>423</sup>.

The most interesting contributions to the 14th-century debate on intelligible species are formulated during the earlier part of the century. Indeed, though the views of Augustinian Hermits such as Gregory and Alfonsus Vargas, as well as those of later Averroists, include interesting elements, they do not transcend the innovative frames of Jandun or Ockham. The latter expresses the most radical opposition to the species, and puts forward an alternative view

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<sup>423</sup> For 15th-century North-European masters of arts, see ch. V, § 2.

which avoids the metaphysical obstacles usually associated with the idea of formal mediation. He regards the intelligible species as ontologically suspect and as epistemologically superfluous, and introduces a new view of intellectual cognition, based essentially on a semantic relation between the human mind and sensible reality. Still, certain important particular psychological problems were left unexplained by Ockham, such as the (possible) mechanisms underlying the capacity for extracting invariants from sensible reality. Indeed, Ockham hardly moves beyond the general framework for cognitive psychology, and largely ignores the problem of providing a detailed model of how knowledge is acquired.

Duns Scotus and Jandun are the most significant representatives of a positive doctrine of intelligible species in the 14th century. Duns seeks to ensure objective reference for cognitive contents concerning universal aspects of sensible reality. His position is not totally unproblematic, however: with the various notions used to defend formal mediation principles, he introduces (chrono) logically distinct stages of the intellectual act, thus jeopardizing its intrinsic coherence. This problematic aspect is brought out most keenly by John Baconthorpe, whose work on intelligible species will be very influential during the 16th and 17th centuries. Also Hervaeus' and Sutton's defences of intelligible species introduce new problems. These authors claim that knowledge is sense-dependent, and over-emphasize the passivity of the human mind in the production of the mental act. Jandun's main contribution to the debate is a detailed specification of the preparatory work accomplished by the inner senses in producing mental representation and content. This interesting and original achievement, however, is based on epistemological commitments that prevent him from giving a sensible account of how the agent intellect contributes to generating knowledge.

The 14th-century authors participating in the species debate disagree on a wide variety of issues. Most of them, however, seem to share a basic commitment: innatism is no longer a viable alternative to sense-bound cognitive psychology. This shared conviction is a crucial, unifying aspect of the doctrinal developments and technical solutions occurring in the 14th-century debate. Indeed, nativist posi-

tions on species will not reappear until the rediscovery and translation of Platonic and Neoplatonic texts during the second half of the 15th century.



## CHAPTER FIVE

### LATE MEDIEVAL DISCUSSIONS

Fifteenth-century contributions to the doctrine of intelligible species seem, at first glance, the outcome of a barren dispute: most authors offer mere variations on themes of 13th- and 14th-century masters<sup>1</sup>. Under the surface, however, new methods announce themselves, clearing the way for the salient changes in Peripatetic psychology introduced by later schoolmen and philosophers<sup>2</sup>.

The first section of this chapter will be devoted to Peter of Ailly and Gabriel Biel. Peter of Ailly, scholarly active during the last quarter of the 14th century and the first decades of the 15th century, plays an important mediating role, transferring to later generations the heritage of Gregory of Rimini. Gabriel Biel is an innovative figure of late medieval Scholasticism, who contributed to the development of Scholastic philosophy chiefly by disseminating Ockham's thought. His widely read commentary on the *Sentences*—a veritable encyclopedia of Ockhamist ideas often reprinted during the Renaissance—was intensely studied by late Scholastics.

Syncretism is a characteristic feature of 15th-century reflections on intelligible species. John Capreolus injects typically Aegidian

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<sup>1</sup> Cf. for example the conventional position of the Franciscan William of Vaurouillon (reads the *Sentences* in 1429-30), in the *Liber de anima*, ed. Ign. Brady, in *Medieval Studies*, 11(1949), 247-307, on p. 296. Apparently, 15th-century Franciscans do not share the keen interest for the species issue manifested by 13th- and 14th-century representatives of the Order of Minors. However, the currently rather rudimentary knowledge of 15th-century Franciscan philosophy does not allow one to provide more than a provisional assessment of their role in epistemological disputes.

<sup>2</sup> I do not completely share the view—generally accepted until recently—of the 15th century as a period of decadence in philosophical and theological thought; see, for instance, G. Meersseman, *Geschichte des Albertismus*, Heft I. *Die Pariser Anfänge des Kölner Albertismus*, Paris 1933; C. Giacon, *La seconda scolastica*, vol. 1: *I grandi commentatori di San Tommaso*, Milano 1944, 17f. For useful corrections to the conventional view of 15th-century theological and philosophical investigations, see H.O. Oberman, *The Harvest of Medieval Theology. Gabriel Biel and Late Medieval Nominalism*, Cambridge (Ma.) 1963.

views into the overall framework of Aquinas' cognitive psychology, tackling the tail of problems left by the intelligible species. His approach influences Lambertus de Monte and John Versor; Henry of Gorcum, Dominicus de Flandria, and Gerard of Harderwijk, by contrast, merely adhere to the "communis opinio". During the first decades of the 15th century, intense epistemological and metaphysical debates—only indirectly related to the intelligible species<sup>3</sup>—develop among many North-European Thomists and Albertists. Some original and historically influential positions on species, mainly due to Albertists, emerge within the framework of these broader controversies. Heymeric de Campo, an Albertist exerting considerable influence on Cusanus<sup>4</sup>, is a case in point. A revival of Thomas' philosophy occurs during the second half of the 15th century—starting with John Versor's attempt to provide a coherent account of Thomas' cognitive psychology within the context of Aquinas' overall philosophy, and culminating with the scholarly activity of Crockaert in Paris. The second section examines the views of these North-European masters.

The works of Blasius of Parma, Paul of Venice, Gaetano of Thiene, and Apollinare Offredi are an important stepping-stone between the first followers of John of Jandun and the so-called School

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<sup>3</sup> See, for instance, the *Invectiva* of the Albertist Heymeric de Campo or the *Apologia* of Gerard Ter Steghen van 's-Heerenberg (called Gerard de Monte), edited by G. Meersseman, *Geschichte des Albertismus*, Heft II. *Die ersten kölnner Kontroversen*, Roma 1935, 107ff. The Albertist-Thomist controversies mainly concern universals and the knowledge of separate substances. The latter issue is related to the question whether knowledge without images is possible. Albertists, generally claiming that the intellectual soul is independent, envisage the possibility of knowledge without images once the intellect is actualized. Cf. Z. Kuksewicz, "Le prolongement des polémiques entre les Albertistes et les Thomistes vu à travers le *Commentaire du De anima* de Jean de Glogow", in *Archiv für Geschichte der Philosophie* 44(1962), 151-171, on pp. 161-62 regarding John of Glogow; Meerseman, *Geschichte des Albertismus*, vol. II, 46-48 on Heymeric. Both parties, however, appealed to Augustine; cf. Kuksewicz, "Le prolongement", 163 and Meerseman, *ibidem*. For discussion see also E. Meuthen, *Die alte Universität*, Köln-Wien 1988, 170-78.

<sup>4</sup> In particular, Italian Renaissance Aristotelians will rank Gaetano of Thiene as highly as Jandun. See K. Park, "Albert's influence on late medieval psychology", in *Albertus Magnus and the Sciences*, ed. J.A. Weisheipl, Toronto 1980, 501-535, on pp. 522-34 for 15th-century Albertist views assimilated by Cusanus; one of the Albertists read by Cusanus was Heymeric de Campo, see § 2.3.

of Padua<sup>5</sup>. Their positions on species are discussed in the third section.

## § 1. THE HEIRS OF GREGORY OF RIMINI AND OCKHAM

### 1.1. *Peter of Ailly*

Peter of Ailly<sup>6</sup> attempts to combine the species doctrine with Ockham's views on the roles of intuition and abstraction in knowledge acquisition, thereby pursuing a strategy rooted in the work of Gregory of Rimini<sup>7</sup>. Just like Gregory and Buridan<sup>8</sup> before him, Ailly endorses the species doctrine and attempts to meet the challenges raised by Ockham's ideas<sup>9</sup>.

An analysis of various meanings attached to the term "species" prepares the ground for Peter's defence. He rehearses, almost *verbatim*, the distinctions drawn by Gregory of Rimini: the species is form in general and, for this very reason, should be regarded as "ratio cognoscendi aliquam rem". An additional meaning of "species" is "similitudo et imago rei cognitae"<sup>10</sup>. Finally, he attempts to characterize cognitive species persisting after the act<sup>11</sup>.

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<sup>5</sup> For Gaetano of Thiene, see E. Kessler, "The intellectual soul", in *Cambridge History of Renaissance Philosophy*, eds. Ch. B. Schmitt and others, Cambridge 1988, 485-534, on pp. 486-90. Thiene is frequently mentioned by later schoolmen; cf. ch. X, *passim*.

<sup>6</sup> Petrus de Alliaco, 1350—1420/1; reads the *Sentences* at Paris, in 1375; for discussion see: B. Meller, *Studien zur Erkenntnislehre des Petrus von Ailly*, Freiburg 1954; R.P. Desharnais, "Reassessing nominalism: a note on the epistemology and metaphysics of Pierre d'Ailly", in *Franciscan Studies* 34(1974), 296-305; O. Pluta, *Die philosophische Psychologie des Petrus von Ailly. Ein Beitrag zur Geschichte der Philosophie des späten Mittelalters*, Amsterdam 1987.

<sup>7</sup> See Gregorius Ariminensis, *Lectura super primum et secundum Sententiarum*, ed. A.D. Trapp & V. Marcolino, tomus I, Berlin-N.Y. 1981, vii; Desharnais, "Reassessing Nominalism", 305.

<sup>8</sup> See Pluta, *Die philosophische Psychologie*, p. 6, for Buridan's influence on Ailly.

<sup>9</sup> The issue of the species in Ailly's work was examined by Meller, *Studien zur Erkenntnislehre*, 126-29, and Pluta, *Die philosophische Psychologie*, 71-97.

<sup>10</sup> *Tractatus de anima*, Ciii<sup>r</sup>. For Gregory's distinction, see ch. IV, § 3.4.

<sup>11</sup> *Tractatus de anima*, Ciii<sup>r</sup>: "Quarto modo sumitur specialiter et proprie pro forma quae est similitudo vel imago rei cognite manens naturaliter in anima etiam postquam ipsa desiit actualiter cognoscere. apta nata ducere animam in noticiam rei cuius ipsa est imago vel similitudo." Cf. Gregory of Rimini, *Super II Sent.*, dist. 7, q. 3, vol. V, 119 (quoted in ch. IV, § 3.4).

Ailly addresses the problem of whether intelligible species are necessary after his extensive defence of sensible species<sup>12</sup>. Peter shares Gregory's view that intelligible species are required for intellectual acts of memory: mnemonic species terminate knowledge of things that are not actually present<sup>13</sup>. As a matter of fact, intellectual abstraction concerns the actual presence of a thing rather than its material or singular nature<sup>14</sup>. He denies that the presence of an image or representation of a thing in an "esse obiectivum" is sufficient for achieving knowledge of that thing<sup>15</sup>. Thus, like Gregory, Peter rejects Aureol's and Ockham's initial views on the composition of intellectual acts<sup>16</sup>. But also Thomistic teachings are abandoned: since the species terminates the knowledge of absent things, it is no longer the purely instrumental "quo" envisaged by Thomas and Scotus.

Peter of Ailly points out that knowledge of species can be acquired by intuition, whereas abstraction is needed for gaining knowledge of the things represented by species<sup>17</sup>. An immediately grasped species—already postulated by Olivi and Gregory—according to Ockham prevents the possibility of directly grasping the represented cognitive object. Ailly disagrees with Ockham's conclusions: he does not reduce the species to a strictly singular and merely mnemonic content, and defends its referring function as

<sup>12</sup> *Tractatus de anima*, Parisiis 1505, Ciii<sup>v</sup>.vii<sup>r</sup>; see Pluta, *Die philosophische Psychologie*, 71-91.

<sup>13</sup> *Tractatus*, Cvii<sup>r</sup>: "Tales autem res insensibiles per predictas suas species non agnoscimus, nam illam rem tantum dicimus cognosci per speciem cuius cognitio immediate terminatur ad eius speciem et mediate ad ipsam rem." Cf. Gregory of Rimini, *Super I Sent.*, dist. 3, q. 1, vol. I, 345 (quoted in ch. IV, § 3.4).

<sup>14</sup> *Tractatus*, Diii<sup>v</sup>.

<sup>15</sup> *Tractatus*, Cviii<sup>r</sup>: "Unde ulterius sequitur quod ad hoc aliquid existens in intellectu sit alicuius rei cognitio vel proprie dicta representatio non sufficit quod sit illius similitudo vel imago. sive quod exhibeat illam tanquam presentem in esse obiectivo."

<sup>16</sup> Also Ockham abandoned the notion of an "esse obiectivum" on account of Walter Chatton's criticisms. Eventually, Ockham analyzes knowledge exclusively on the basis of objects and mental acts. Ockham, like Henry of Ghent and others, did not accept that cognitive contents remain in the intellect as preserved species stored in intellectual memory after the mental act. As alternatives to ensure the cohesion of intellectual conceiving, Henry develops his concept of intellectual habit, Ockham that of "apitudo", arising after several 'similar' experiences.

<sup>17</sup> *Tractatus*, Cvii<sup>v</sup>: "Licet autem species cognoscatur intuitive per cogitationem illam: per ipsam tamen non experimur nec evidenter cognoscimus virtute illius cognitionis quod illa sit species rei talis vel talis. (...) ergo speciem intuitive videmus: et virtute talis visionis speciem esse evidenter scimus licet non sic sciamus cuius sit."

a formal principle of knowledge. He comes closer to Duns' view of species as an indispensable mediation towards universal knowledge, when he claims that a plurality of objects can be known through a species<sup>18</sup>. He emphasizes the mediating role of species, subsequently drawing a distinction between actual knowledge on the one hand, and species and intellectual habit on the other hand<sup>19</sup>. Thus, species are the results of immediate intuitive knowledge, and cannot be identified with cognitive acts<sup>20</sup>.

After illustrating the difficulty of finding a satisfactory solution for the "subiectum" of the species<sup>21</sup>, Peter summarizes his views on species and the relation between abstractive and intuitive cognition. A determinate knowledge involving species may be simultaneously abstractive and intuitive. Indeed, every piece of abstractive knowledge involves intuition (though intuitive knowledge does not involve abstraction); our knowledge of species is intuitive, whereas knowledge of external objects represented by species is abstractive<sup>22</sup>. Obviously, Peter shares Ockham's doctrine that cognitive acts are to be distinguished with respect to their intrinsic features, rather than "per objecta".

Ailly's account of formal principles—inspired by the epistemology of Gregory—meets central objections against an unconscious, not primarily known, mediating entity in intellectual cognition<sup>23</sup>, such as formulated by Peter Olivi and Durandus<sup>24</sup>. In fact, he acknowledges that the human mind can attain direct knowledge of the instruments involved in the mechanism of sense perception and intellectual knowledge, even though their chief function is representational.

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<sup>18</sup> *Tractatus*, Cvii<sup>v</sup>-viii<sup>r</sup>.

<sup>19</sup> *Tractatus*, Cvii<sup>v</sup>-viii<sup>r</sup>.

<sup>20</sup> This position, adopted by Gregory also, conflicts with the views of Godfrey, Olivi, Brito, and many others.

<sup>21</sup> *Tractatus*, Cviii<sup>v</sup>.

<sup>22</sup> *Tractatus*, Diii<sup>v</sup>: *Uterius sequitur quod isti termini noticia intuitiva et abstractiva non sunt impossibiles simpliciter: sed sunt verificabiles de eadem noticia non tamen respectu eiusdem realiter.*" See *Tractatus*, Cvii<sup>v</sup>. Cf. Pluta, *Die philosophische Psychologie*, 95.

<sup>23</sup> Similarly to Gregory of Rimini's view of species which provided the basis for Ailly's account. See ch. IV, § 3.3.

<sup>24</sup> See, for Olivi's and Durandus' positions, ch. III, § 3.4 and IV, § 2.1.

Peter of Ailly had considerable influence on 15th-century philosophical discussions, and his treatise on the human soul was frequently referred to also in later periods<sup>25</sup>. It was recently discovered, for example, that Gabriel Biel wrote a commentary on this work<sup>26</sup>.

### 1.2. *Gabriel Biel*

Gabriel Biel's commentary on the *Sentences*, which appeared in at least ten printed editions during the 15th and 16th centuries, was regarded as an authoritative textbook, and a major source of Ockhamist views and ideas<sup>27</sup>. This work influenced Luther and Melancthon, for example. It became so popular that the Jesuit institute for theological instruction in Salamanca eventually established a chair exclusively devoted to its systematic study<sup>28</sup>. Later schoolmen made frequent appeal to Biel's views in discussing intelligible species<sup>29</sup>.

Biel outlines his own account of sensible and intelligible species mainly through a comparison with the views of Duns Scotus, Ock-

<sup>25</sup> Cf. Desharnais, "Reassessing nominalism", 302; Pluta, *Die philosophische Psychologie*, 5.

<sup>26</sup> See F.J. Burkard, "Ein handschriftlicher Kommentar Gabriel Biels zum Traktat «De anima» des Pierre von Ailly", in *Alte Fragen und neue Wege des Denkens*, Festschrift für Josef Stallmach, Bonn, 1977, 82-91.

<sup>27</sup> Gabriel Biel, 1425 Speyer—1495 Schönbrunn; studies at Heidelberg and Erfurt; defends the Holy See against schismatic movements in Germany; ca. 1460 gains fame as preacher in Mainz; 1468, enters the community of the Brethren of Common Life in Windesheim; teaches philosophy and theology from 1484 at the university of Tübingen. For more bio-bibliographical data, see H.O. Oberman, *The Harvest of Medieval Theology*, 10-16; F.J. Burkard, *Philosophische Lehrgehalte in Gabriel Biels Sentenzenkommentar unter Berücksichtigung seiner Erkenntnislehre*, Meisenheim am Glan 1974, pp. 5f.

<sup>28</sup> See Burkard, *Philosophische Lehrgehalte*, 13f.

<sup>29</sup> See: Fr. Suarez *Liber de anima*, in *Opera omnia*, t. III, Paris 1856, 613b and 627b; Collegium Conimbricense, *Commentarii in tres libros De anima Aristotelis Stagiritae*, Venetiis 1616, 293b; Hieronymus Dandinus, *De corpore animato*, lib VII. *Luculentus in Aristotelis tres de Anima libros Commentarium peripateticum*, Parisiis 1611, col. 1981; Fr. de Oviedo, *Cursus philosophicus*, Lyon 1640, 97, 227; Collegium Complutense, *Disputationes in tres libros Aristotelis De anima*, Lugduni 1637, 449b; Ildephonsus De Peñafiel, *Cursus integer philosophicus*, Lugduni 1655, 507b and 665b; Sebastian Izquierdo, *Pharus scientiarum*, Lugduni 1659, 2b; Bartholomaeus Mastrius & Bonaventura Bellutus, *Disputationes in Aristotelis libros De anima*, Venetiis 1671, 182b; Ant. Bernardus de Quiros, *Opus philosophicum*, Lugduni 1666, 603a.

ham, Gregory of Rimini, and Peter of Ailly<sup>30</sup>. Like Gregory and Peter, he carefully distinguishes between various meanings of the term "species"<sup>31</sup>. Unlike them, Biel rejects both sensible and intelligible species, appealing to Ockham's principle of parsimony and to Ockham's arguments against the species. He focuses on arguments purportedly eliminating the need for sensible species, and claims that these arguments may readily be extended to intelligible species. I shall briefly examine his objections against sensible species.

Biel argues that here is no need for sensible species, since the external senses can grasp their objects directly, and the (abstractive) act of the inner senses depends essentially upon the intuitions of the external senses<sup>32</sup>. Biel does not reject the existence of "qualitates impressae" in sensation, but he consequently defines them as sensibles, that is, as possible objects<sup>33</sup>. Sensible species may be the source of deceptions, because they could engender intuitions of non-existent things<sup>34</sup>.

Biel does not deviate from Ockham's teachings as far as intellectual knowledge is concerned. He takes it for granted that intuitive cognition does not involve species<sup>35</sup>. And if one endorses Ockham's principle of economy and the fundamental parallelism between sense perception and intellectual knowledge, then one is bound to conclude that no species is presupposed by mental acts. In addition, Biel gives Ockham's famous list of five objections against

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<sup>30</sup> See Gabriel Biel, *Collectorium circa quattuor libros Sententiarum*, I. II, eds. W. Werbeck & U. Hofmann, Tübingen 1984, dist. III, q. 2 "Utrum angelus intelligat se et alia per essentiam suam vel per species a rebus acceptas vel a Deo infusas".

<sup>31</sup> Gabriel Biel, *Collectorium circa quattuor libros Sententiarum*, I.c., 120-21.

<sup>32</sup> See *Collectorium*, I.c., 129-130, for a summary of his conclusions.

<sup>33</sup> *Collectorium*, I.c., 129: "Summando ergo quae in his conclusionibus dicta sunt, dico quod ab obiecto sensibili non producit aliqua species insensibilis excitans potentiam ad eliciendum primam sensationem. Potest tamen a qualitate obiecti produci qualitas sensibilis eiusdem rationis in medio, quae potest esse obiectum alterius sensationis a sensatione obiecti, a quo producitur."

<sup>34</sup> *Collectorium*, I.c., 125: "Si ponetur talis species, quae cum potentia sensitiva produceret sensationem, esset causa naturalis. Volo quod conservetur a Deo, destructo obiecto exteriori. Adhuc causaret sensationem cum potentia, quia non mutata quoad esse vel quoad suam naturam. Prima autem cognitio est intuitiva. Et sic naturaliter causaretur notitia intuitiva obiecti non existentis, quod est impossibile." As the editors remark in a footnote, this argument was already formulated by Ockham; cf. *Opera*, vol. VI, 52f.

<sup>35</sup> Later schoolmen will assume also intuitive species; cf. ch.'s X and XII.

intelligible species<sup>36</sup>. Purely mnemonic species are dismissed as well, because the continuity of our knowledge is guaranteed by an intellectual habit, “*inclinans potentiam ad formandum cognitionem similem seu eiusdem rationis cum ea*”<sup>37</sup>.

According to Biel, the species doctrine is based on an incorrect model of cognitive representation, erroneously identifying the object to be known with something penetrating cognitive powers from without<sup>38</sup>. Moreover, a view of the species as a sort of iconic representation stands in the way of providing a coherent account of its ontological status *and* psychological function. This is the strategy adopted in Biel’s critical arguments, revealing that he automatically assumes that species are impressed.

By the time of Biel, the tradition of perspectivist optics has left a permanent mark on the intelligible species debate: species are invariably viewed as (pictorial) representations passively received from without and impressed on the human intellect. Even Duns Scotus had already endorsed this view<sup>39</sup>. Intelligible species, when identified with iconic replicaes of the object penetrating the cognitive powers of man, give rise to a number of epistemological puzzles<sup>40</sup>. For how can the human intellect—an immaterial entity having no commonalities with species—ever handle this ‘raw material’, or purify it? Biel holds that nothing from the object enters the cognitive power. Therefore, he avoids speaking about the status of cognitive contents in general, since the object itself has no proper mode of being in knowledge. Knowledge can be adequately analyzed on the basis of cognitive powers and acts determined by ob-

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<sup>36</sup> *Collectorium*, l.c., 131-32; see also ch. IV, § 3.1.

<sup>37</sup> *Collectorium*, l.c., 135f; see also Burkhard, *Philosophische Lehrgehalte*, 58f.

<sup>38</sup> Cf. Burkard, *Philosophische Lehrgehalte*, 118: “Neben dieser empiristischen Grundhaltung Biels spielen auch noch andere Gründe für die Ablehnung der Erkenntnispezies eine Rolle. Für Biel besteht die Lehre von den Spezies auf einem überholten Vorstellungsmodell. In seinen Augen betrachten die Vertreter dieser Lehre das, was vom äußeren Objekt als erkannt in die Erkenntnis eingeht, allzu gegenständlich. Für sie ist die Spezies ein Bild, das vom Objekt abgehoben wird, sich den Sinnesorganen einprägt, von diesen erfaßt wird, und von einer Erkenntnispotenz zur anderen gleichsam in der Art einer Sache weitergereicht wird, wobei sich selbstverständlich für den Intellekt die Notwendigkeit ergibt, dieses sinneshafte Etwas zuerst zu reinigen und zu erhellen, damit es in die geistige Potenz eingehen und von ihr begriffen werden kann.”

<sup>39</sup> See ch. IV, § 1.1.

<sup>40</sup> See also ch. III, § 6.



jects. Concepts, as well as phantasms, exist only in cognitive acts. In turn, a cognitive act does not represent an object, because it is a “subiectum” of distinct contents; rather, mental acts represent because they are brought about by the external objects<sup>41</sup>. Like Ockham, Biel formulates a coherent alternative to the species: direct realism.

## § 2. CAPREOLUS, NORTH-EUROPEAN DOMINICANS, AND THE REVIVAL OF THOMISM

### 2.1. *John Capreolus*

John Capreolus is the main forerunner of a long tradition of Thomistic commentators, although he still practices the more traditional Scholastic form of a commentary on the *Sentences*<sup>42</sup>. It is not until the next century that reputable schoolmen will abandon Lombard’s textbook for Aquinas’ *Summae*: Thomas de Vio (better known as Caietanus) and Francesco Sylvester of Ferrara<sup>43</sup>, strongly influenced by Capreolus’ work, adopted the form of a direct commentary on the writings of Aquinas—and thus followed a course already taken by Henry of Gorcum. This shift in philosophical style was mainly due to the revival of Thomas’ thought, originating in Paris around the turn of the 15th and the 16th century<sup>44</sup>.

Capreolus introduces the problem of intelligible species with a critical review of the main positions emerging in the 13th and 14th centuries<sup>45</sup>, which reveals his intention of formulating a balanced view based on a careful assessment of the contributions made by his predecessors. He follows the general guidelines of Thomas’ doctrine: the presence of the object is not sufficient for the act of

<sup>41</sup> Cf. also Burkard, *Philosophische Lehrgehalte*, 119-121.

<sup>42</sup> Johannes Capreolus, † 1444; teaches in Paris from 1408; there he reads the *Sentences* in 1409. Capreolus wrote also an extensive *Defensiones theologiae divi Thomae Aquinatis*, eds. C. Paban and T. Pègues, 7 vols., Turonibus 1900-1908 (reprint Frankfurt am Main 1967).

<sup>43</sup> For Caietanus and Sylvester of Ferrara, see ch. VII, § 2.

<sup>44</sup> Peter Crockaert, teaching at the convent of Saint-Jacques, by 1509 substitutes Aquinas’ *Summa theologiae* for the *Sentences* as the basis for theological instruction; see also § 2.7.

<sup>45</sup> *In libros Sententiarum amplissimae Quaestiones, pro tutela doctrinae S. Thomae*, Venetiis 1589, II, dist. 3, q. 2, 147-162.

cognition<sup>46</sup>, which requires a received species<sup>47</sup>. This intelligible species is a singular *and* immaterial entity, and therefore has the capacity to represent the universal or the intelligible nature of sensible things<sup>48</sup>.

This rather trite rehearsal of views rather commonly presented by past Masters is of considerable historical interest: such accounts of species were generally rejected by contemporary authors of Dominican inspiration<sup>49</sup>. Notwithstanding his plea for a Thomistic orthodoxy of some sort, Capreolus is clearly influenced by the perspectivist approach. This can be seen from his definition of the intelligible species as “*similitudo impressa*”, distinguished from the “*verbum mentis*” which is a “*similitudo expressa*”<sup>50</sup>. His allegiance to the central tenets of Thomistic psychology does not prevent Capreolus from endorsing and integrating within the Thomistic framework doctrinal elements derived from other authors or schools.

Capreolus focuses on the vexing question of the origin of species. The more evident point of departure from Thomas’ view concerns exactly this issue. Indeed, Capreolus does not endorse the Thomistic doctrine of abstraction, and puts forward an alternative solution borrowing typical elements from the Aegidian approach: phantasy partakes in the intellectual light, since both are ‘rooted’ in the same human soul<sup>51</sup>. Thus, the species can be produced by phantasy “*virtute intellectus agentis*”<sup>52</sup>. This solution had already been envisaged by Giles of Rome—whose works Capreolus mentions as

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<sup>46</sup> *In II Sent.*, l.c., 177b.

<sup>47</sup> *In II Sent.*, l.c., 166b.

<sup>48</sup> *In II Sent.*, l.c., 173a; cf. also 185b–186a.

<sup>49</sup> See, for instance, Heymeric de Campo, whose work is examined below in subsection 3. For discussion, see G. Meersseman, *Geschichte des Albertismus*, Heft II. *Die ersten kölnner Kontroversen*, Roma 1935, p. 32.

<sup>50</sup> *In II Sent.*, l.c., 178; cf. 175a.

<sup>51</sup> Cf. *In II Sent.*, 189a: “(...) est causa quodammodo efficiens, quòd phantasmata recepta in potentijs in eadem essentia animae radicatis sunt virtuosiora, & forte alterius speciei quàm phantasmata brutorum, in hoc quia sunt habilia ad movendum, sicut causa partialis & instrumentalis intellectum possibilem, (...)”

<sup>52</sup> See *In II Sent.*, 173a: “Unde licet fantasmata existant cum conditionibus materialibus, tamen faciunt speciem immaterialem in intellectu possibili, virtute intellectus agentis immaterialis (...)”. On pp. 185b–186a, Capreolus speaks, however, also about the species caused by the agent intellect; see *infra*.

supporting evidence<sup>53</sup>—as well as by Jandun and other 14th-century Averroists. Notwithstanding these conceptual relationships, Capreolus' account affords only a slight deviation from Thomistic 'orthodoxy', since Giles' doctrine may be regarded as a natural development of a theme already present in Aquinas—namely, the participation of being<sup>54</sup>.

According to Capreolus, the intellect's light makes the phantasms "habiles"; more precisely, the agent intellect provides them with a "virtus spiritualis". This activity functionally supersedes the traditional abstraction of species by the agent intellect, though Capreolus occasionally mentions the latter in his account<sup>55</sup>. The intelligible species is produced upon illumination, and the possible intellect can receive it<sup>56</sup>. As in Giles, the intelligible species results from the joint action of sensory representations and the active feature of the human mind<sup>57</sup>. The illumination of the agent intellect is a crucial causal factor because it accomplishes a substantive modification of sensory information<sup>58</sup>.

The efficacy of the agent intellect on phantasms distinguishes Capreolus from most of his Scholastic predecessors. Most likely inspired by the Aegidian tradition<sup>59</sup>, he anticipates the solution of Sylvester of Ferrara, combining Aegidian views on the production of mental representations with a rather enigmatic text in the *Summa contra Gentiles*<sup>60</sup>. Capreolus grounds the production of the species in the mind's illuminating activity directed towards sensory representations, and therefore deprives abstraction of its effective func-

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<sup>53</sup> See, for example, *In II Sent.*, 174a, where he uses Giles' authority against Henry of Ghent.

<sup>54</sup> See ch. III, § 2.3.

<sup>55</sup> Cf. *In II Sent.*, 189a.

<sup>56</sup> *In II Sent.*, 189a-190a.

<sup>57</sup> See also *In II Sent.*, 188b, where he characterizes their action as resulting from two imperfect causes, and rejects two other possibilities: (i) the sun-moon metaphor (the former illuminates the latter which in turn illuminates the earth); (ii) the production of a disposition in the phantasm, comparable with the flexibility of wax. This scheme originates with the opposition of Olivi and Durandus against the agent intellect, and recurs in Crockaert; see below, subsection 7.

<sup>58</sup> *In II Sent.*, 185b-186a.

<sup>59</sup> See also Alphonsus Vargas Toletanus's views in ch. IV, § 3.5.

<sup>60</sup> See *Summa contra Gentiles*, II.77.1581: "Est igitur in anima intellectiva virtus activa in phantasmata, faciens ea intelligibilia actu: et haec potentia animae vocatur intellectus agens." See also ch. VII, § 2.2 for Sylvester of Ferrara's interpretation of the illumination.

tion in the process of knowledge acquisition<sup>61</sup>. The spiritual character thereby conferred to phantasms enables the latter to provide the intellect with an integrated representation of sensory information. Thus, the objectivity of knowledge is ensured by postulating a significant interplay between sensibility and intellect, as Giles had done before. Also other aspects of Capreolus' account remind one of the views of the Augustinian Hermit. The double illumination of the intellect is a case in point, characterized respectively as an "illuminare" concerning external objects, and as an inwardly directed "lucere"<sup>62</sup>. The internal cohesion of the intellectual act, however, is jeopardized by these distinctions, because intellection is fragmented into (chronologically) separate moments<sup>63</sup>.

Capreolus' psychological view may appear as a relatively uninspired reflection on the heritage of previous Masters. His analysis of intelligible species, however, brings to bear technical tools shaped in later discussions on problematic aspects of Aquinas' work. His views will influence Lambertus de Monte and Sylvester of Ferrara<sup>64</sup>.

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<sup>61</sup> *In Sent II*, 189a: "(...) ergo nullo modo intelligimus abstrahendo a phantasmatis."

<sup>62</sup> *In Sent II*, 177b. Giles assigned a double illumination to the agent intellect, respectively regarding sensory representations and the possible intellect; cf. ch. III, § 2.3.

<sup>63</sup> See also *In Sent II*, 190a, where the co-operation between agent intellect and phantasm is regarded as prior to the reception of the possible intellect. A similar approach to the cognitive act—i.e., distinguishing various moments in order to 'save the cognitive phenomena'—was already followed by Scotus; cf. ch. IV, § 1.1.

<sup>64</sup> See, respectively, subsection 6 below, and ch. VII, § 2.2. Moreover, his name appears frequently in later Scholastic discussions on intelligible species; see Collegium Conimbricense, *Commentarii in tres libros De anima Aristotelis Stagiritae*, Venetiis 1616, 289b, 308b; Philippus Fabro, *Philosophia naturalis Jo. Duns Scoti*, Venetiis 1602, 489b; Antonius Ruvius, *Commentarii in libros Aristotelis Stagyrtae (...), de Anima (...)*, Lugduni 1613, 664; Michael Zanardus, *Commentaria cum quaestionibus in tres libros De anima Aristotelis*, Venetiis 1617, 186a; R. de Arriaga, *Cursus philosophicus*, Antwerpiae 1632, 726b; Collegium Complutense, *Disputationes in tres libros Aristotelis De anima*, Lugduni 1637, 451b; Ioannes Poncius, *Integer Philosophiae cursus ad mentem Scoti*, Pars III, Romae 1643, 488b; Ildephonsus de Peñafiel, *Cursus integer philosophicus*, Lugduni 1655, 598a.

## 2.2. Henry of Gorcum

Henry of Gorcum<sup>65</sup>, influential master of theology at the University of Cologne, is one of the leading figures of the 15th-century Thomas renaissance. Henry does not address the issue of intelligible species in his commentary on the *Sentences*<sup>66</sup>, nor in his exegetical commentary on Thomas' *Summa theologiae*<sup>67</sup>. In his commentary on the *De anima* he advances a fairly traditional view on formal mediation in intellectual cognition.

The *De anima* commentary first touches the subject of intelligible species in the context of a refutation of Averroes' noetics. According to Henry, Averroes postulates the existence of separate substances endowed with intelligible species, and simultaneously maintains that the same species are grounded in sensory representations of the human soul *qua* subject<sup>68</sup>. What is remarkable about this criticism is the fact that Henry, like so many other medieval scholars, depicts Averroes as an advocate of the species doctrine.

In accordance with Thomas' teachings, Henry regards the species as individual in being and universal in its representational power, that is, as "similitudo communis plurium"<sup>69</sup>. Indeed, the species represents material substances after their quidditative structure<sup>70</sup>. The intellect acquires the species "ministerio potentiarum organicarum". Since the phantasy contains species only potentially, however, Henry appeals to the agent intellect as the exclusive sufficient cause of their production. In view of this intervention, the species can be regarded as a principle of immanent action, namely

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<sup>65</sup> Henricus de Gorychem, †1431; 1398 magister artium, Paris; 1419 matriculated in Cologne; teaches at the University of Cologne between 1419-1431; for more biographical data, see A.G. Weiler, *Heinrich von Gorcum († 1431). Seine Stellung in der Philosophie und der Theologie des Spätmittelalters*, Hilversum-Einsiedeln 1962, providing on pp. 84f a survey of Henry's works. Henry attempted to mediate in the conflict between the Thomist Gerard de Monte and the Albertist Heymeric de Campo.

<sup>66</sup> *In quatuor libros Sententiarum*, Basileae 1498.

<sup>67</sup> Cf. *Quaestiones in S. Thomam*, Esslingen 1473, repr. Frankfurt 1967, "In Iam Partem", q. 25 which regards merely the "species concreatae" of the angels. I have consulted the edition of Basel 1498 of Henry's commentary on the *Sentences*.

<sup>68</sup> Henricus de Gorychem, *Positiones circa libros physicorum et de anima Aristotelis* (...), Köln 1494, H<sup>irb</sup>.

<sup>69</sup> *Positiones*, H<sup>iva</sup>.

<sup>70</sup> *Positiones*, H<sup>iiia</sup>.

"sicut a quo fit actio quae immediate terminatur ad rem conceptam"<sup>71</sup>.

Henry of Gorcum's remarks on intelligible species remain faithful to the main tenets of Thomas' cognitive psychology. His rather 'scholastic' exposition, unconcerned with specific issues regarding nature, origin or function of species, suggests that he viewed the species doctrine as a fairly unproblematic and unchallenged part of Thomas' thought.

### 2.3. Heymeric de Campo

More interesting views on cognitive psychology are to be found in the work of Heymeric de Campo<sup>72</sup>, who was called to Cologne by Henry of Gorcum in order to defend Thomism against the Albertists<sup>73</sup>. Heymeric, however, did not fulfil these expectations. Though endorsing moderate positions on many problems dividing Albertists and Thomists<sup>74</sup>, he highlighted the differences between Albert and Thomas on noetic issues, and eventually became the champion of Albertism at Cologne<sup>75</sup>. Heymeric offers a strongly

<sup>71</sup> *Positiones*, Hivb-ijra.

<sup>72</sup> Heymeric de Campo, 1395—1460; for biographical data, see Heymeric van de Velde, *Eenheid in de tegendelen*, ed. M.J.F.M. Hoenen, Baarn 1990; for bibliographical data, see: J.-D. Caviglioli, "Les écrits d'Heymericus de Campo (1395-1460) sur les oeuvres d'Aristote", in *Freiburger Zeitschrift für Philosophie und Theologie* 28(1981), 289-371; J.-D. Caviglioli & R. Imbach, "Quelques compléments aux catalogues des oeuvres d'Heymericus de Campo", in *Codices Manuscripti* 7(1981), 1-3.

<sup>73</sup> The existence of an Albertistic movement at the beginning of the 15th century has been questioned by H.G. Senger, "Albertismus? Überlegungen zur 'via alberti' im 15. Jahrhundert", in *Albert der Grosse. Seine Zeit, sein Werk, seine Wirkung*, ed. A. Zimmermann, Berlin-N.Y. 1981, 217-236. This opinion is shared by E. Meuthen, *Die alte Universität*, cit., 186. However, their views are corrected by M. Hoenen, "Heymeric van de Velde († 1460) und die Geschichte des Albertismus: Auf der Suche nach den Quellen der albertistischen Intellektslehre des Tractatus Problematicus", in *L'empreinte de la pensée. Cultures et philosophies de l'Allemagne médiévale. Sources, développement, diffusion*, ed. A. de Libera, Bergamo 1992, 323-352, on p. 325f.

<sup>74</sup> See his *Problemata inter Albertum Magnum et Sanctum Thomam*, Köln 1496; this work was completed in 1424, and published in 1428. For discussion, see Meerseman, *Geschichte des Albertismus*, Heft II, 23f.

<sup>75</sup> For discussion, see Meerseman, *Geschichte des Albertismus*, Heft I, 16-17, and Heft II, passim; cf. Z. Kuksewicz, "Le prolongement des polémiques entre les Albertistes et les Thomistes vu à travers le *Commentaire du De anima* de Jean de Glogow" for Heymeric's polemics with Gerard de Monte; and M. Hoenen, "Heymeric van de Velde († 1460) und die Geschichte des Albertismus: Auf der Suche nach den Quellen der albertistischen Intellektslehre des Tractatus Problematicus", cit., 329f.

Neoplatonic interpretation of Albert's psychological teachings, pointing to a possible influence of Dietrich of Freiberg and Henry Bate on his work<sup>76</sup>.

Heymeric's cognitive psychology hinges on an interpretation of Augustine's distinction between a "ratio superior" and a "ratio inferior"<sup>77</sup>, unfolded in the 13th question of the *Problemata*, which is devoted to analyzing whether "an intellectus humanus posset aliquid sine phantasmate intelligere"<sup>78</sup>. "Inferior reason" stands for the soul directed towards the body and sensory phantasms, whereas the superior reason "intendit eternis et inheret deo"<sup>79</sup>. The superior reason is also characterized as a sparkling divine particle<sup>80</sup>, illuminating the human soul "per species universi ordinis"<sup>81</sup>. The species introduced here, though endowed with representational capacities<sup>82</sup>, is not qualified as intelligible. Surely, it differs from the cognitive content *tout court*. This interpretation is supported by Heymeric's use of the term "species" in his analysis of sense perception.

The phantasm is "species abstracta a forma sensibili", and "intentio concreta"<sup>83</sup> as well. Other passages confirm that Heymeric indicates the phantasm or sensible intention with the expression "abstracted species"<sup>84</sup>. In this connection it should be noticed that

<sup>76</sup> See also Hoenen, in Heymeric van de Velde, *Eenheid in de tegendelen*, 38 and 14.

<sup>77</sup> This view is also present in Albert, see *Summa theologiae*, ed. Borgnet, vol. XXXIII, Pars II, tr. 15, q. 93, m. 4, 205a.

<sup>78</sup> *Problemata*, B iii<sup>r</sup>. For an analysis of the same issue in other, contemporary authors, see M. Hoenen, "Heymeric van de Velde († 1460) und die Geschichte des Albertismus", cit., 327-29.

<sup>79</sup> *Problemata*, 41v.

<sup>80</sup> *Problemata*, 40v. An influence of Meister Eckhart's view of the divine spark in the human soul seems quite likely. Cf. also f. 43r, where Heymeric compares the relation between the inferior and superior reason with that between smouldering wood and a flame. For a similar concept in Albert, Ulrich of Strasbourg († 1277), and Dietrich, see M. Hoenen, "Heymeric van de Velde († 1460) und die Geschichte des Albertismus", cit., 330.

<sup>81</sup> *Problemata*, 40v. A possible doctrinal background for this "species universi" is the notion of "forma ordinis universi" in Albert, *Summa de creaturis*, ed. Borgnet, vol. XXXV, pars II, q. 56, a. 5, 486a; see also *De intellectus et intelligibili*, II, c. 11, 519a-520a. I am grateful to Maarten Hoenen for calling my attention to these passages.

<sup>82</sup> See also the use of the term "species" in the Latin translation of Proclus' *Parmenides* commentary, discussed in ch. I, § 4.3.

<sup>83</sup> *Problemata*, 41v.

<sup>84</sup> *Problemata*, 42v.

the “species universi” informing the intellect is not abstracted. Heymeric endorses Albert’s view that the agent intellect is a knowing faculty identifiable with the formal act of (separate) intelligibles<sup>85</sup>. The psychological significance of abstraction at the mental level is consequently abated<sup>86</sup>. In fact, the “species universi” must be regarded as a mental representation produced in virtue of the divine particle’s light, which is unperturbed by sensory images. These species are consistently referred to as “species intelligibilitatis”, too<sup>87</sup>. These principles, merely representing eternal structures, have no instrumental role in conceptualizing the sensible world. However, the interplay between soul and sensible reality is not restricted to perceptual experience alone: the inferior reason is directed to the sensible realm, and may engender intellectual knowledge of it.

At an earlier stage of his *Problemata*, Heymeric makes the general observation that the final cause and the agent intellect enable the mind to access the “quidditates” of sensible things. The term “intelligible species” occurs for the first time in this context:

Et in iam habita positione nihil ponitur obvium communi opinionioni, quam quod universale post rem non est tantum intentio seu species intelligibilis, sed est ipsa veritas essentiae intentionaliter praesentata (...). <sup>88</sup>

Heymeric’s characterization of the intelligible species as “universale post rem” is a clear sign of a tendency to identify the principles of being and knowledge<sup>89</sup>. The claim that knowledge of the sensible realm must be grounded in phantasms holds only for inferior reason—so Heymeric argues in *Problemata*—and therefore Thomas’ cognitive psychology is entirely valid within this restricted domain<sup>90</sup>. The distinction between sense-dependent and sense-independent intellectual knowledge revives a view advanced by

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<sup>85</sup> *Problemata*, 44r-v.

<sup>86</sup> See also Meerseman, *Geschichte des Albertismus*, vol. II, 23-24: “abstractio” cannot be identified with “ablatio” or “remotio”. Cf. Hoenen, in Heymeric van de Velde, *Eenheid in de tegendelen*, 44. Heymeric shares the view of a *knowing* agent intellect with Dietrich and Albert; cf. ch. II, § 2.1 and ch. III, § 5.2.

<sup>87</sup> *Problemata*, 42v.

<sup>88</sup> *Problemata*, probl. 2, f. 8v-9r.

<sup>89</sup> This appears also from the context of this passage; see also Hoenen, in Heymeric van de Velde, *Eenheid in de tegendelen*, 15.

<sup>90</sup> *Problemata*, 43r.



early 13th-century authors, such as Alexander of Hales and Robert Grosseteste, which was still endorsed by Albert the Great<sup>91</sup>.

Heymeric proposes effective roles for species in both types of rational cognition, without merely identifying the species with an illuminated phantasm or an innate cognitive content. At the level of knowledge generated by the divine particle, species are representational entities. At the level of the inferior reason, the intelligible species has no representational function, since it is identified with the universal; nonetheless, it preserves an instrumental function, since it mediates between the intelligible kernel of sensible reality and the human mind.

Heymeric's neoplatonically oriented interpretation of Albert's noetics and cognitive psychology will influence Scholastic authors such as John of Glogow<sup>92</sup> and John of Malinas<sup>93</sup> in addition to some independent authors, such as Nicholas of Cusa<sup>94</sup> and Wessel Gansfort<sup>95</sup>.

#### 2.4. *John of Malinas*

John of Malinas<sup>96</sup> shares with Heymeric de Campo the same philosophical and cultural background. In particular, his cognitive psy-

<sup>91</sup> See ch. II, § 1 and 2.

<sup>92</sup> Z. Kuksewicz, "Le prolongement des polémiques entre les Albertistes et les Thomistes vu à travers le *Commentaire du De anima* de Jean de Glogow", 163-165.

<sup>93</sup> Hoenen, in Heymeric van de Velde, *Eenheid in de tegendelen*, 35-36; cf. also A. Pattin, "Jan van Hulshout (1405-1475). Vlaams wijsgeer en theoloog aan de Universiteit te Keulen", in *Tijdschrift voor Filosofie* 38(1976), 104-138, on p. 111.

<sup>94</sup> Hoenen, in Heymeric van de Velde, *Eenheid in de tegendelen*, 9.

<sup>95</sup> Cf. M. Hoenen, "Albertistae, thomistae und nominales: Die philosophisch-historischen Hintergründe der Intellektlehre des Wessel Gansfort († 1489)", in *Wessel Gansfort and Northern Humanism*, eds. F. Akkerman, G.C. Huisman, and A.J. Vanderjagt, 32 pp. (forthcoming).

<sup>96</sup> Johannes Hulshout de Mechlinia, 1405—1475; a Flemish theologian and philosopher; 1424 matriculated in the university, Cologne; 1426, magister artium, there; 1428, in Louvain; 1430-39, professor in the faculty of arts, Cologne; 1430, dean of the arts faculty; 1438, doctor theologiae; 1440-1475, professor in the faculty of theology; see also A. Pattin, "Jan van Hulshout (1405-1475). Vlaams wijsgeer en theoloog aan de Universiteit te Keulen", 104-138. As a theologian he holds that the Philosopher cannot contradict the Catholic faith; see *Commentaria trium librorum De anima*, T v<sup>va</sup>, for his knowledge of the theological tradition. See also *idem*, S vi<sup>rb</sup> where he refers to Augustine, Damascenus, and Gregory of Nyssa

chology, presented in a *Tractatus de homine*<sup>97</sup> and a *De anima* commentary<sup>98</sup>, is strongly influenced by the Albertist tradition<sup>99</sup>. Though adopting an overall Thomistic outlook, he takes up the Neoplatonic strands in Albert's psychology, and pursues the latter's approach on (the bounds of) intellectual knowledge—an issue where the conflict between Albert and Aquinas is most evident. A significant detail in the context of our discussion is Malinas' acquaintance with Henry Bate<sup>100</sup>.

In his commentary on *De anima*, the notion of an intelligible species informing the possible intellect is presented as self-evident and unproblematic<sup>101</sup>. Malinas rejects Platonic innatism, emphasizing the mind's dependence on sensory representations<sup>102</sup> in terms confirming that the perspectivistic impression doctrine had by then become the dominant view on the origin of species:

(...) sic intellectus est virtus passiva anime intellective quae passive perficitur per impressionem speciei intelligibilis.<sup>103</sup>

With a presumably still unchallenged historical interpretation, he traces the doctrine of intelligible species back to Averroes<sup>104</sup>. Following Albert, he asserts that the species is present in the intellect as "locatum in loco", since the possible intellect cannot be viewed as its subject<sup>105</sup>.

Malinas expresses traditional Thomistic views on knowledge of singulars and the self<sup>106</sup>. More surprisingly, he anticipates a strategy adopted by later authors when he appeals to Thomas' doctrine of

<sup>97</sup> A. Pattin (ed.), "Le *Tractatus de homine* de Jean de Malines. Contribution à l'histoire de l'Albertisme à l'Université de Cologne", in *Tijdschrift voor Filosofie* 39(1977), 435-521; John of Malinas' authorship was questioned by F.L. Lescoe, *God as First Principle in Ulrich of Strasbourg*, New York 1979, 73-82.

<sup>98</sup> *Commentaria trium librorum De anima secundum doctrinam Alberti magni (...)* cum plurimorum notabilium adiectione per (...) Gerardum de Harderwick, Köln 1497 (first edition Köln 1491).

<sup>99</sup> In addition to Albert, in his *De anima* commentary Avicenna and Algazel are frequently quoted; cf., for instance, *Commentaria trium librorum De anima*, f. S iii<sup>vb</sup>.

<sup>100</sup> See *Commentaria trium librorum De anima*, S vi<sup>ra</sup> for a reference to Bate's *Speculum*, discussed in ch. III, § 5.1.

<sup>101</sup> See *Commentaria trium librorum De anima*, T ii<sup>vb</sup>-iii<sup>ra</sup>; cf. V v<sup>vb</sup>.

<sup>102</sup> *Commentaria trium librorum De anima*, V v<sup>ra</sup>; cf. f. T iii<sup>rb</sup>-va.

<sup>103</sup> *Commentaria trium librorum De anima*, T v<sup>ra</sup>.

<sup>104</sup> *Commentaria trium librorum De anima*, T v<sup>rb</sup>.

<sup>105</sup> *Commentaria trium librorum De anima*, T iii<sup>vb</sup>; X iii<sup>rb</sup>: "Sed potius recipiuntur in eo sicut in quodam perspicuo illuminato intellectuali."

<sup>106</sup> *Commentaria trium librorum De anima*, T vii<sup>rb</sup>-viii<sup>rb</sup>; cf. V i<sup>rb</sup>.

participation in order to settle some typically psychological problems<sup>107</sup>. His Thomistic allegiance in cognitive psychology is rather thin and marginal, however, especially when compared to the impressive influence of Albert on a number of pivotal issues. For example, John endorses a central tenet of traditional Albertist noetics when he claims that the agent intellect is the constitutive principle of intelligibility<sup>108</sup>. Probably influenced by Heymeric de Campo, or sharing a common source, he describes the superior part of the human mind as “*particula divina*” or as “*mens*”, assimilating it to the Augustinian “*ratio superior*”<sup>109</sup>. The agent intellect, as the Doctor Universalis suggested, is assigned a twofold cognitive role—namely, abstraction of the intelligible form, thereby made simple and universal, and illumination of the possible intellect<sup>110</sup>. Furthermore, Malinas postulates the presence of intelligible species in the agent intellect<sup>111</sup>. This seems to contradict his opposition to Platonic innatism, although he is careful to describe species in the intellect as ‘seeds’ that are present only “*ideali modo*”<sup>112</sup>. More significantly, he attempts to assimilate this idea to the Augustinian

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<sup>107</sup> Cf. *Commentaria trium librorum De anima*, V v<sup>ivb</sup> where the distinction between agent and possible intellect is justified on the basis of the participation theory. In *idem*, X ii<sup>rb</sup>, invoking the authority of Albert, the intellect as “*habitus*” is viewed as “*imago primae causae*”. Finally, on f. X iii<sup>v</sup>, John of Malinas appeals to Thomas’ doctrine of “*transcendentalia*” with his characterization of “*ens*” as “*verum*” depending upon the divine intellect. For discussion of Thomas’ doctrine of transcendentals, see L. Oeing-Hanhoff, *Ens et unum convertuntur. Stellung und Gehalt des Grundsatz in der Philosophie des Hl. Thomas von Aquin*, Münster 1953.

<sup>108</sup> See *Commentaria trium librorum De anima*, X iii<sup>ra</sup>, where the agent intellect is defined as “*formale efficiens intelligibilis*”. Dietrich of Freiberg’s noetics is the most radical interpretation of this aspect of Albert’s thought; cf. ch. III, § 5.2.

<sup>109</sup> *Commentaria trium librorum De anima*, X iii<sup>v</sup>; for Heymeric, see the preceding subsection.

<sup>110</sup> *Commentaria trium librorum De anima*, V ii<sup>ra</sup>. See also f. X v<sup>va</sup>, where the possible intellect is described as a fourfold instrument: for phantasms, agent intellect, angelic intellect, and God’s intellect, respectively. Thus, it may be illuminated by superior intellects; cf. also *infra*.

<sup>111</sup> *Commentaria trium librorum De anima*, V iv<sup>b</sup>: “*Differt autem hic intellectus a possibili quoniam cum suum intelligere nihil aliud sit nisi quod suum intellectuale lumen imbuitur intellectis speciebus et resplendet in eis. non egreditur suum intelligere extra ipsum*”. This passage derives *verbatim* from Albert, *De anima*, III, tr. 2, c. 18, 204b (quoted in ch. II, § 2.1). For a similar position, see Dietrich of Freiberg, discussed in ch. III, § 5.2.

<sup>112</sup> *Commentaria trium librorum De anima*, X ii<sup>ra</sup>; cf. f. X ii<sup>va</sup>.

view of the soul as an active principle producing its species exclusively in virtue of innate capacities<sup>113</sup>.

Malinas does not use the term "species" for representational devices only: in addition to a strictly mediating, cognitive function, species are considered as formal principles *tout court*. Postulating a close relationship between this metaphysical characterization and the cognitive function of species is another typical Albertist view<sup>114</sup>. Indeed, the intellect, identifying itself with the cognitive object, for example a stone, becomes "species lapidis", that is, it may be considered as a formal 'container' of sensible reality at mental level<sup>115</sup>.

As formal principle of knowledge, the intelligible species preserves its usual function in the mind's first operation:

Hic enim actus est circa intelligibile obiectum simpliciter quod intellectus apprehendit secundum exigentiam speciei intelligibilis ipsius obiecti.<sup>116</sup>

The intelligible species enables the human intellect to become identical with its object, that is, the universal or "quod erat esse"<sup>117</sup>. The human mind, however, is not restricted to sense-dependent knowledge and abstracted species. Separate entities are indeed known "sine medio"<sup>118</sup>. Thus, against Thomas and with Albert, he argues for knowledge without phantasms<sup>119</sup>. The authority of Albert is invoked again—together with Dionysius, Avicenna, and even Bernard of Clairvaux—to argue that our soul is capable of knowing separate substances, and that the latter can play a role in the process of human knowledge<sup>120</sup>.

<sup>113</sup> *Commentaria trium librorum De anima*, X iirb. See also the view of authors such as Matthew of Aquasparta and Roger Marston, discussed in ch. III, § 4.

<sup>114</sup> See ch. II, § 2.1 and the position of the "species universi ordinis" in Heymeric, discussed *supra*.

<sup>115</sup> *Commentaria trium librorum De anima*, V vvb; X iiiirab; X iiiirb; V vira.

<sup>116</sup> *Commentaria trium librorum De anima*, X iiiiva.

<sup>117</sup> *Commentaria trium librorum De anima*, X vvb.

<sup>118</sup> *Commentaria trium librorum De anima*, X iiiivb.

<sup>119</sup> *Commentaria trium librorum De anima*, X iiiirb: "(...) postquam intellexerit alia; potuit secundum portionem eius superiorem intelligere se et separata sine conversione ad phantasmata."

<sup>120</sup> *Commentaria trium librorum De anima*, X iiiivb. Connected with these Albertist views is Malinas' idea, originating in Arabic philosophy, that the human intellect is climbing, with its process of actualization, some kind of ladder, progressively becoming "intellectus in effectum", "intellectus adeptus" and, eventually,

In concluding the second treatise of his comment on the third book of *De anima*, John summarizes his overall view of the cognitive process. Initially, the intellect becomes the object to be known just in virtue of a representational, intelligible species—a veritable principle of knowledge, since it is needed to bring about the (primary) cognitive act. Then, the mind knows its own act regarding the object. Subsequently, the mind grasps the intelligible species. At this stage, the presence of the intelligible species in the intellect makes it possible to reflect on the cognitive power itself. Finally, the intimate essence of the intellect can be grasped<sup>121</sup>.

A relatively independent view on the role of formal principles in intellectual knowledge can be found in a *Tractatus de homine*, attributed to John of Malinas by Pattin<sup>122</sup>; distinctly Neoplatonic theses<sup>123</sup> provide the framework for a metaphysical account of intentionality of the cognitive species.

It is only through intentional forms that the human mind accesses sensible reality<sup>124</sup>. Unlike, for example, Gregory of Rimini and Peter of Ailly, Malinas maintains the traditional instrumental character of the intentional form, which is not known in itself<sup>125</sup>. However, in contrast with the more traditional view appealing to a process of abstraction, John claims that these intentions are capable of informing the intellectual soul mostly on account of intrinsic properties that they share with forms in general. Indeed, forms are not permanently tied to matter: founded on the “exemplares” that

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“intellectus assimilatus” or “divinus”, which is endowed with prophetic capabilities. See also f. X iiiivb.

<sup>121</sup> *Commentaria trium librorum De anima*, X vvab.

<sup>122</sup> Malinas' treatise on man was recently published: A. Pattin (ed.), “Le *Tractatus de homine* de Jean de Malines. Contribution à l'histoire de l'Albertisme à l'Université de Cologne”, in *Tijdschrift voor Filosofie*, 39(1977), 435-521.

<sup>123</sup> See, for instance, *Tractatus de homine*, 442-443, where Malinas analyzes the origin of the soul “a Deo simul et natura”, created “in umbra intelligentiae”. He often emphasizes the participation of the agent intellect in God; cf. p. 486 and 492. However, a strong Neoplatonic tendency is detectable in the epistemological views of other Northern Albertistic authors such as, for instance, Heymeric de Campo, whose views on noetics and cognitive psychology, are examined in subsection 3.

<sup>124</sup> *Tractatus de homine*, 452: “Dicitur vero intentio originaliter a verbo «tendo,-is» quia per eam potentia cognitiva tendit in alterum ut in obiectum; et ipsa non terminat cognitionem, sicut visus per species coloris tendit in colores seu res coloratas, quae videntur; species enim non videntur.”

<sup>125</sup> See also *Tractatus*, 495.

are in the divine mind, they preserve a certain “virtualem et aptitudinalem communicabilitatem”<sup>126</sup>. And since the intention itself is an effect of exemplar forms, it can become a perfection of cognitive powers<sup>127</sup>. In this respect, John’s account is consistent with the Aristotelian view that the acts of cognitive object and possible intellect coincide within the intellectual act.

Malinas qualifies intelligible species as abstracted, but provides no clue as to their possible origin in the sensible realm. The species, as “principium intelligendi”, falls squarely within the domain of the mental. As intentional form, it represents the intelligible form at the mental level<sup>128</sup>. This metaphysical status enables the species to provide the intellect with a cognitive content. A further shift towards Neoplatonic innatism<sup>129</sup> is signalled by the thesis that intentional forms or species take part in the circular motion of reality<sup>130</sup>, contributing to drive the soul upwards onto a path whose last term is God<sup>131</sup>.

There are significant relationships between John’s Neoplatonism and the psychological views emerging with the Platonic revival in Italy. However, Malinas’ main source of inspiration is still a traditional type of comment on the *De anima*, invariably carried out—no matter how much its author was influenced by Neoplatonic and Arabic interpretations—within a Scholastic conceptual framework. The main representatives of this tradition are Albert and some of

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<sup>126</sup> *Tractatus*, 452; on the same page John states that the species is “similitudo”; on p. 454, it is called “notio”: “Relinquitur ergo, quod forma huiusmodi non est proprie substantia vel accidens, sed utriusque species, notio vel imago.” For the terminological background of the interpretation of the species/intention as “notio”, see ch. I, § 4.2. Also Nifo interprets the species as “notio”, see ch. VI, § 3.3.

<sup>127</sup> *Tractatus*, 453: “Est ergo forma intentionalis velut actus et perfectio potentiae cognitivae seu appetitivae conducens ad actum cogoscendi at appetendi.” See also p. 457.

<sup>128</sup> Cf. also *Tractatus*, 495: the species is “actus rei”.

<sup>129</sup> John states that the agent intellect is “quaedam intellectus divini participatio” and supposes the intelligible species to be present in it. See *Tractatus*, 486: “(...) sic noster intellectus agens agit universalitatem in esse intentionaliter intelligibili, illustrando possibilitatem intellectus diversis speciebus intelligibilibus.”

<sup>130</sup> *Tractatus*, 453: “Forma vero intentionalis est actus communicabilis refluens sursum et antecedenter, sive versus superius et antea recedens a componibilitate et divisibilitate materiae ad originem indivisibilem formae.”

<sup>131</sup> *Tractatus*, 488: “Intellectus autem satiari potest, dummodo coniungatur summo et primo intelligibili, quod in omni intelligibili desideratur.”

his 13th-century followers, as well as some of Malinas' contemporaries, such as Heymeric de Campo<sup>132</sup>.

### 2.5. *John Versor and Dominicus of Flandria*

John Versor<sup>133</sup> is the first 15th-century author undertaking the project of establishing firm ties between Thomistic cognitive psychology and Aquinas' overall doctrinal frame<sup>134</sup>. In his commentary on the *De anima*, he seems motivated by the non-dogmatic goal of isolating the metaphysical presuppositions of Thomas' psychology, rather than by the more conventional idea of establishing some sort of Thomistic psychological orthodoxy<sup>135</sup>. His specific strategy is that of interpreting Aquinas' cognitive psychology within the context of his doctrine of participation. His work presents a genuine (Thomistic) alternative to the Albertism prevailing in Northern Europe<sup>136</sup>.

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<sup>132</sup> Moreover, also the impact on Malinas of the 'local' interest in Platonic views, exemplified by Henry Bate, is to be taken into account. See *In de anima*, S vi<sup>ra</sup> for a reference to Bate's *Speculum*. Other Neoplatonic interpretations will be treated in the second volume; see ch.'s VI and VIII. An affine view is that of Giordano Bruno; see ch. VIII, § 3.3.

<sup>133</sup> Johannes Versor, † after 1482; by 1435, magister artium at Paris; 1449, declined rectorship; 1458, rector; magister theologiae; 1468, 1478, 1479, 1482, still in Paris; probably not at Cologne. His *De anima* commentary was printed several times: Lyon (1489), Köln (1496), Metz (1501), Krakow (1514).

<sup>134</sup> See *Quaestiones super tres libros De anima Aristotelis*, Cracovie 1514.

<sup>135</sup> His references to other authors, such as Avicenna, Averroes, Dionysius (*Quaestiones super tres libros De anima*, 172v) and Albert (*Quaestiones*, 144r and passim) are frequent. Cf. also *Quaestiones*, pp. 138v, 154r, 160v, 169r, 174r for Giles of Rome; pp. 140r, 145v, 147r, 149r for John of Jandun. For the harmony between Aristotle and catholic doctors see *Quaestiones*, pp. 145v-146r; on pp. 141r and 150v-151r he expresses, respectively, his anti-alexandrist and anti-averroism.

<sup>136</sup> His divergence with Albertistic psychology is most evident in his arguments against intellectual cognition without a "conversio ad phantasmata"; cf. *Quaestiones*, 174r-175r.

Created human intellects must abstract intelligible species—a “quo”<sup>137</sup> and causing cognitive acts<sup>138</sup>—in order to know sensible reality. Although mind and body are connected to each other by a natural bond<sup>139</sup>, this does not mean that the mind’s receptivity is comparable to that of prime matter. The mind’s dependence upon intelligible species arising from sensory images is a “passio salvativa”<sup>140</sup>, and the characterization of the intellectual soul as “locus specierum” is only metaphorical, since the mind is not a “locus physicus”<sup>141</sup>. Moreover, prime matter receives its being from the informing form, whereas the possible intellect does not receive its being from the intelligible species, and therefore is not purely “potentia”<sup>142</sup>. These claims, indicating Versor’s commitment to genuine Thomistic views, prepare the ground for extending the framework for cognitive psychology and the philosophy of mind to the doctrine of the participation of being<sup>143</sup>.

The need for intelligible species is motivated by an argument that was by that time costumarily included in standard species repertoires: an intermediate representational principle is necessary because sensory images are incapable of moving or directly determining the receptive mind<sup>144</sup>. Versor uses an extension of the same argument to establish the necessity of the agent intellect<sup>145</sup>. Like Thomas, Versor characterizes the light of the agent intellect as a participation in the first cause. And the contents of mental acts, in addition to our intellectual capacities, depend on participation too: “intelligentes sumus mediantibus formis derivatis a prima cau-

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<sup>137</sup> See *Quaestiones*, 140r, where Versor refers to Jandun for a definition: “similitudo rei intellectae existens in intellectu possibili a fantasmate per intellectum agentem abstracta representativa rei universaliter”. See also p. 165v. On p. 177v, Versor rephrases Thomas’ view that knowledge regards things, rather than species; cf. *In De anima*, lectio VIII, 718. Jandun’s psychology is implicitly rejected on p. 152r, where Versor observes that, if one admits a “species intelligibilis numerata”, then the intellect cannot be unique for mankind. For Jandun’s converse argument, see ch. IV, § 4.3.

<sup>138</sup> *Quaestiones*, 143v.

<sup>139</sup> *Quaestiones*, 143v.

<sup>140</sup> *Quaestiones*, 137v and 141v.

<sup>141</sup> *Quaestiones*, 140r, 141r and 142r.

<sup>142</sup> *Quaestiones*, 145r.

<sup>143</sup> See also *Quaestiones*, 161r where the idea of participation is also applied to the relation between perceptual and cognitive faculties.

<sup>144</sup> *Quaestiones*, 162r.

<sup>145</sup> *Quaestiones*, 156rv.



sa”<sup>146</sup>. Versor holds that the illumination of the agent intellect regards the object to be known rather than the medium, and thus anticipates Caietanus’ doctrine of the ‘objective’ illumination<sup>147</sup>. Distinctively Thomistic is also the determination of the twofold nature—namely as singular and as universal—of the intelligible species<sup>148</sup>. Versor introduces an original distinction, however: from an ontological point of view, the intelligible species is an accident inherent to a subject (the possible intellect)<sup>149</sup>, whereas, at the psychological level, the species is the intellect’s first act, its “perfectio”<sup>150</sup>. Thomas treated more cursorily the ontology of intelligible species, and maintained that the mind’s first act, defined as “scientia”, is based upon them<sup>151</sup>. Versor describes more precisely the metaphysical status of the intelligible species, yet without drawing a sharp distinction between the primary mental act and its founding representational principle.

The Capreolean view of a cooperation between agent intellect and sensible images—endorsed by Versor, and recurring in Lambertus de Monte<sup>152</sup>—was not uniformly accepted by Thomist authors: the student of Versor Dominicus de Flandria<sup>153</sup>, for example, states in his *De anima* commentary that no virtue can be impressed upon phantasms<sup>154</sup>.

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<sup>146</sup> *Quaestiones*, 167rv. Cf. *Summa theologiae*, I, q. 84, a. 4, ad 1: “Quod species intelligibiles quas participat noster intellectus, reducuntur sicut in primam causam in aliquod principium per suam essentiam intelligibile, scilicet Deum. Sed ab illo principio procedunt mediantibus formis rerum sensibilium et materialium, a quibus scientiam colligimus.”

<sup>147</sup> *Quaestiones*, 159v; for Caietanus’ views, see ch. VII, § 2.1.

<sup>148</sup> *Quaestiones*, 152v.

<sup>149</sup> *Quaestiones*, 152v and 166r.

<sup>150</sup> *Quaestiones*, 156v and 166r.

<sup>151</sup> See *Summa contra Gentiles*, II, c. 73, 1526 and ch. II, § 3.2.

<sup>152</sup> See *infra*.

<sup>153</sup> Dominicus de Flandria (Beaudin Lottin) OP, 1425 Merris or Merville—1479 Bologna; studied at Paris under John Versor; 1461 entered the Dominican Order, Bologna; 1461, professor of philosophy, first at Florence, then in various convents of the Order; 1478, regens of Studium in Santa Maria Novella, Florence.

<sup>154</sup> See Dominicus de Flandria, *Brevis recollecta super tres libros de anima Aristotelis*, Venetiis 1501, M6rb; in this edition Dominicus published Thomas’ *De anima* commentary. For his role as mediator between medieval and Renaissance Scholasticism, see K. Eschweiler, “Die Philosophie der spanischen Spätscholastik auf der deutschen Universitäten des siebzehnten Jahrhunderts”, in *Spanische Forschungen der Görresgesellschaft* 1(1928), 251-325, on p. 263.

## 2.6. *Lambertus de Monte and Gerard of Harderwijk*

The epistemological view of Lambertus de Monte<sup>155</sup> is another variation on the synthesis, already encountered in the work of Capreolus, between Aegidian and Thomistic approaches. The precise origin of intelligible species, discussed in a *De anima* commentary, poses real problems for this Dominican of the Low Countries. Submitting that they are produced by the agent intellect, he almost contextually subjoins that sensible species, once illuminated, have a natural tendency towards the possible intellect<sup>156</sup>. The contiguity between these two claims suggests that he was seeking an acceptable merging point of the two realms, wherein intelligible species could originate in a natural way.

Lambertus puts forward an eclectic view combining more or less conventional approaches to species. He maintains that intelligible species are received by the intellect as "subiectum". This thesis, rejected by Albert and other authors<sup>157</sup>, is endorsed by his contemporary Offredi, and will be the subject of an intense dispute between various Renaissance Aristotelians at the turn of the 15th century<sup>158</sup>. He reiterates Thomas' view that one is not entitled to infer the materiality of the species from its singularity<sup>159</sup>, and accepts Duns Scotus' characterization of the species as the first act<sup>160</sup> without discarding appealing features of Capreolus' thought, echoed in the thesis that intelligible species are produced by sensible images in virtue of the agent intellect:

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<sup>155</sup> Lambertus de Monte, OP, † 1499; 1455-73, professor artium; 1473-99, professor theologiae; 1480-99, regens. For Lambertus' doctrinal position, especially with respect to influence of John Versor and Giles of Rome on his ideas, see Z. Kuksewicz, "Die ägdische Interpretation der Theorie der Seele bei Lambertus de Monte", in *Thomas von Aquin. Werk und Wirkung im Licht neueren Forschungen*, ed. A. Zimmermann, Berlin-N.Y. 1988, 403-412.

<sup>156</sup> *Expositio circa III libros De anima Aristotelis, qua commentariis Thomae Aquinatis nedum concordat*, Coloniae 1498, lviii<sup>rb</sup>: "quia sicut unumquodque tendit in suum locum naturalem. ita species sensibiles acceptae sub lumine intellectus agentis naturaliter tendunt ad intellectum possibilem."

<sup>157</sup> Cf. ch. II, § 2.1; see also John Versor, *supra*.

<sup>158</sup> See, for example, *Expositio De anima*, lviii<sup>rb</sup>; see *infra* ch. VI-VII.

<sup>159</sup> See *Expositio De anima*, p. lviii<sup>rb</sup>-lix<sup>rb</sup>.

<sup>160</sup> *Expositio De anima*, lix<sup>rb</sup>-va.

(...) quia species intelligibilis advenit intellectui possibili ex resultantia a phantasmate per virtutem luminis intellectus agentis.<sup>161</sup>

Elsewhere, he gives another formulation for the same thesis: intelligible species "incorporant lumen intellectus agentis"<sup>162</sup>. Lambertus assigns a rather problematic role to the agent intellect: its illumination is supposed to invest both phantasms and intelligible species. The latter have a natural tendency to return to their origin, and therefore need a superior entity to preserve their immateriality in the possible intellect<sup>163</sup>. Lambertus seems to favor an abstraction of species, but his analysis entails a fragmentation of the intellectual act into separate steps lacking the sequential and functional organization generally postulated for the process of abstraction. Indeed, aside from stating that the illumination of phantasms is a prerequisite for the abstraction of species, he introduces an unrelated type of illumination preparing the possible intellect for receiving the intelligible species<sup>164</sup>.

The concern for the immateriality and persistence of the mental act dominates Lambertus' views on knowledge acquisition. He thinks that intellectual acts and memory can be properly based on a threefold illumination regarding sensory representations, possible intellect and, most notably, abstracted intelligible species. Such multifarious illumination, however, jeopardizes the unity of the mental act, as well as the intrinsic coherence of Lambertus' account.

Gerard of Harderwijck<sup>165</sup>, a late 15th-century Albertist, does not deviate from classical Thomism in the lapidary remarks on intelli-

<sup>161</sup> *Expositio De anima*, lx<sup>rb</sup>.

<sup>162</sup> *Expositio De anima*, lxii<sup>rb</sup>.

<sup>163</sup> Cf. the twofold task assigned to the agent intellect in *Expositio De anima*, lxiii<sup>vb</sup>: "(...) ideo intellectus agens illuminans phantasmata facit resultare unam speciem immaterialem ad intellectum possibilem et hoc est abstrahere. (...) Illuminare species sic abstractas et ad intellectum possibilem receptas. quia nisi intellectus agens continue illuminaret species existentes in intellectu possibili tunc redirent ad materialitatem." With this view, Lambert suggests an explanation also for the natural tendency to forget of the intellect.

<sup>164</sup> Cf. *Expositio De anima*, lxiii<sup>vb</sup>: "Illuminat enim phantasmata antecedenter abstrahendo species a phantasmatibus. et illuminat intellectum possibilem ut referentur in ipso species intelligibiles."

<sup>165</sup> Gerardus de Harderwijk, † 1503; master of arts. He also published John of Malinas' *De anima* commentary.

gible species contained in his *De anima* commentary<sup>166</sup>. Gerard asserts that the intellect assimilates things through intelligible species, described as “repraesentativae rei”<sup>167</sup>. These species cannot move the possible intellect because they are only potentially present in phantasy. For this reason, the agent intellect must come into play<sup>168</sup>, exercising a complex cognitive role characterized on the basis of its various causal functions. In this respect, Gerard states that the agent intellect, as light, is a formal cause producing “esse intellectuale”, and reiterates Albert’s thesis that the agent intellect, as effective cause (“ars”), generates intelligibility in the phantasms. The final goal of both activities is that of forming an intellectual habit<sup>169</sup>.

## 2.7. Peter Crockaert

Peter Crockaert<sup>170</sup> is one of the driving forces of the Thomas Aquinas revival starting at the university of Paris around the turn of the 15th century. Like the *De anima* commentaries of John Versor and Lambertus de Monte, Crockaert’s exposition of Aristotelian psychology<sup>171</sup> assigns a prominent role to Aquinas’ thought, and systematically supports the central tenets of his cognitive psychology—that is, the need for sensory representations and formal mediation in intellectual knowledge<sup>172</sup>.

<sup>166</sup> *Commentarii trium librorum Aristotelis de anima*, Köln 1494; we have consulted the second edition of 1497, also published in Cologne.

<sup>167</sup> *Commentarii trium librorum Aristotelis de anima*, P i<sup>ra</sup>.

<sup>168</sup> *Commentarii trium librorum Aristotelis de anima*, P vij<sup>rb</sup>-va.

<sup>169</sup> *Commentarii trium librorum Aristotelis de anima*, P vij<sup>ab</sup>-Q ij<sup>ra</sup>.

<sup>170</sup> Petrus de Bruxellis (alias Crockaert), O.P., ca. 1465/70 Brussels—1514 Malinas; studied under John Major at the Collège de Montaigu, Paris; magister artium, there; taught philosophy in the nominalist tradition, there; 1503, entered the Order in the convent of Saint Jacques and endorsed Thomism; 1504, approved for the teaching of the *Sentences* in the convent of the Order; 1507, began teaching theology, there (his pupils included Francisco de Vitoria and Domingo de Soto); by 1509 he replaced the *Sentences* with Aquinas’ *Summa theologiae* as the basis for theological instruction in the convent. For discussion of the cultural and doctrinal background of this reform, see M.D. Chenu, “L’humanisme et la réforme au College de Saint-Jacques de Paris”, in *Archives d’histoire dominicaine* 1(1946), 130-146.

<sup>171</sup> Petrus de Bruxellis (Crockart), *Argutissime, subtiles et fecunde quaestiones phisicales (...) in octo libros Physicorum et in tres de Anima (...) Aristotelis*, Parisiis 1521, (first and second edition, respectively, 1510 and 1515); unnumbered files.

<sup>172</sup> See, for instance, *In tres de Anima*, III, q. 1, a. 3.

Following a widespread strategy among his contemporaries, Crockaert introduces the issue of intelligible species when examining the role of the agent intellect, and the nature and contents of intellectual memory. The need for an agent intellect is argued for on the basis of Thomas' analysis of the major differences between Plato and Aristotle on the ontology of cognitive objects<sup>173</sup>. Contrary to Plato's opinion, the human soul does not participate in separate intelligibles or ideas: as Aristotle pointed out, no autonomously subsisting forms are to be accepted<sup>174</sup>. This criticism does not prevent Crockaert from assimilating, like Thomas did before him, distinctively Platonic views in his theory of intellectual knowledge—for example, that the human soul, in virtue of a superior intellect, is capable of illuminating phantasms<sup>175</sup>.

Crockaert examines several objections against the necessity of the agent intellect: (1) the possible intellect has sufficient means for generating immaterial acts; (2) any conceivable illumination must concern the medium, rather than the object to be known; (3) the agent intellect cannot introduce anything in the phantasms<sup>176</sup>; (4) the very notion of abstraction is questionable, because the singular character of sensory representations cannot be eliminated; (5) the agent intellect does not enable phantasms to move the possible intellect, and is causally inert with respect to phantasms in other related ways; (6) the agent intellect cannot influence phantasms at all; finally (7), active mind and phantasms cannot co-operate<sup>177</sup>.

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<sup>173</sup> Cf. *Summa theologiae*, I, q. 79.

<sup>174</sup> *In tres de Anima*, III, q. 1, a. 5.

<sup>175</sup> See Thomas, *Summa theologiae*, I, q. 79, a. 4; *Summa contra Gentiles*, I, c. 68, 570 and II, c. 77, 1584; *De substantiis separatis*, c. XIV, 127; *Quaestio de spiritualibus creaturis*, a. 10; *Quodlibetum* X, q. 4, a. 7c. For discussion, see ch. II, § 3.4.

<sup>176</sup> Crockaert lists the well-known objections: (i) the immaterial cannot move the material; (ii) what is received by phantasms, assumes the material character of these sensory representations; (iii) natural forms do not flow from one subject to another; (iv) every rational action must be an act of conscious knowledge.

<sup>177</sup> Three possible forms of co-operation are rejected: (i) the sun illuminates the moon, which, in turn, illuminates the world; (ii) the agent intellect causes a disposition in sensory representations, which is comparable to the flexibility of wax; (iii) as two imperfect agents. For similar lists, see Olivi (ch. III, § 3.4) and Durandus (ch. IV, § 2.1).

Crockaert takes serious account of only some of these objections<sup>178</sup>. Against the first two of them, he argues that the possible intellect is not capable of transferring phantasms to a higher level (*ad* 1), and that the quidditative essence present in sensible things is not actually intelligible (*ad* 2). A more interesting response, especially from a historical point of view, concerns the third objection. A positive and constructive relation of the human soul to the body is possible, inasmuch as the human reason is capable of influencing judgments concerning the sensible world. More generally, Crockaert remarks:

Ad secundum partem [of the objection] dicitur quod intellectus abstrahit speciem a fantasmatis id est in se trahit et recipit speciem productam a fantasmate. quod fit intelligibile actu. per quod intellectus possibilis reducitur in actum quando aspectus eius inclinatur ad inferiora ex unione corporis.

In this passage, elements of various doctrinal traditions converge. The abstraction of the intelligible species by the intellect is an active assimilation (“trahit”) presupposing a receptive capacity in the intellect. The concurrence of active elaboration and reception, characterizing the mental act, is a genuine psychological view of Thomas rephrased in slightly different terms. But the species produced by sensory representations is a typically Aegidian notion—obviously congenial to many Averroists as well. The work of Crockaert and several elder contemporaries shows that 15th-century Thomistic psychology is a complex doctrinal body comprising elements from earlier positive accounts of intelligible species<sup>179</sup>.

A more unusual doctrinal element appears in the concluding statement of the passage quoted above, concerning the mind’s “aspectus” and its propensity towards inferior things. Peter Olivi introduced this notion of “aspectus” on the ground that the mind, contrary to what is envisaged by the species doctrine, cannot be affected by sensory representations<sup>180</sup>. This element provides an indication for better understanding the intellect’s “trahere”. According to Crockaert, the crucial role played by phantasms in the

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<sup>178</sup> In particular, he dismisses at the outset (4) to (6), whereas he regards (7), ascribed to Hervaeus (“in secundo”), as an ungrounded objection.

<sup>179</sup> See, in particular, Capreolus, Lambertus, and others, discussed above.

<sup>180</sup> See ch. III, § 3.4.

cognitive process does not entail any passivity of the intellect, contrary to what is suggested by many opponents of Thomas' psychology. Abstracting intelligible species does not amount to extracting (spoiled) species from the phantasy<sup>181</sup>, since this process enables the mind to grasp the potentially intelligible kernel of sensible reality from a species that will be turned into an actual intelligible.

As a final point in his discussion of the third objection Crockaert reports, without comments, the opinion of "alii": no real action in the phantasms is associated with the illumination by the agent intellect. This seems an implicit reference to Caietanus' doctrine of the objective illumination<sup>182</sup>. Caietanus is not mentioned, however, and Crockaert refers only to a passage in Thomas<sup>183</sup>.

In the first article of the second question, devoted to the problem of whether there is (intellectual) memory containing intelligible species, Crockaert addresses more directly the issue under scrutiny. He starts with a series of 18 objections, which can roughly be summarized as follows. The intellect would always know actually if intelligible species were permanent. The intellectual act requires the mere presence of the object; and an intellectual habit will do if the object is not present. Therefore, any possible species must be identified with intellection, that is, with what the potential intellect

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<sup>181</sup> "(...) quia accidens non migrat de subiecto in subiectum."

<sup>182</sup> "Alii opinantur quod intellectus agens nil reale producit in fantasmatis nisi forte obiective ita quod facit quidditatem in eis apparere non apparentibus conditionibus individuans et sic in fantasmate est intelligibile in actu non formaliter sed obiective sic theologi dicunt unum angelum alium illuminare licet in eo nil effective producat." Cf. *In primam Summae Theologiae partem commentaria*, Parisiis 1514, 361r: "Unde in proposito imaginor quod cum in fantasmate sit natura haec: adveniente lumine intellectus agentis fantasma illustratur non formaliter: ut diaphanum: sed obiective ut color: qua illustratione splendet atque in fantasmate non totum quod est in eo sed quidditas seu natura tamen & non singularitas illius ei commista: ita quod ista illuminatio est abstractiva: quia facit apparere unum scilicet quod quid est: non apparendo aliud scilicet principium individuans: ac per hoc splendet in fantasmate intelligibile in actu: natura scilicet abstrahens ab hic & nunc & tale intelligibile in actu movet intellectum possibilem." See also pp. 392v-393r and *Commentaria in libros Aristotelis de Anima*, Florentiae 1509, K5ra. For discussion of Caietanus' doctrine of illumination, see ch. VII, § 2.1.

<sup>183</sup> That is, *De veritate*, q. IX, a. 5, ad 2: "Ad secundum dicendum quod angelus loquens nihil facit in angelo cui loquitur, sed fit aliquid in angelo ipso loquente, et ex hoc ab alio cognoscitur modo prius dicto; unde etiam non oportet quod loquens aliquid in fundat ei cui loquitur."

in effect receives first<sup>184</sup>. Something which is unknown cannot give rise to knowledge<sup>185</sup>. The principle of parsimony applies to the species, and in intuition no species are needed. If species persist after an intellectual act, the agent intellect is not needed in subsequent intellections. Conversely, if intelligible species depend upon the phantasms, their preservation as immaterial representations is jeopardized. Peter concludes his list with some more theologically oriented objections<sup>186</sup>.

Crockaert's refutation of these objections presents few original or significant ideas; his replies rely heavily on the authority of Aquinas. The Durandian opposition is met with an interesting observation, though: one may regard the species as the first known, but only "causaliter" so, as opposed to "formaliter". In other words, the species has a crucial causal function in the intellect's first operation. As information-bearing symbol, the species is an integrated element of a complex cognitive activity, the goal of which is to acquire information about individual material essences. Thus, it can be regarded as 'causally' known. In effect, with this distinction Crockaert concedes that Durandus' objection is not totally unfounded. He does not repudiate Aquinas' teachings, however, because no direct awareness ('formal' knowledge) of the species is theorized.

The second article of the same question is devoted to exploring the mind's relation to phantasms and the process of abstracting from sensory representations. Crockaert shares the view—which he attributes to Hervaeus—that abstraction from sensory representations is not to be confused with another type of abstraction, yielding universal notions concerning singular members of a determinate class. This logico-discursive operation is not a real action, whereas the abstractive activity concerning phantasms is "*realis motio qua movetur intellectus a fantasmate, vel ad speciem intelligibilem vel ad actum intelligendi*". The distinction between two types of ab-

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<sup>184</sup> The background for this objection is provided by the criticisms of Godfrey of Fontaines and John Baconthorpe; see ch. III, § 3.2, and IV, § 2.2.

<sup>185</sup> See the opposition of Durandus, analyzed in ch. IV, § 2.1.

<sup>186</sup> Which includes: (i) an intellectual memory may record only universals, which entails the unwanted consequence that the sinner in afterlife would be unable to remember his sins; (ii) conversely, the blessed souls with memory would be spelled continuously to their earthly life.



straction, less sharply drawn in Albert and Thomas<sup>187</sup>, is probably inspired by Giles' views: considering abstraction in the intellect's first operation as "realis motio" is Crockaert's proposal for securing that phantasms and agent intellect can play effective and distinct roles in the production of mental acts:

Dicitur autem talis motio abstractio cum quia intellectus est superior causa quantum a fantasma. a quo dicitur fieri abstractio tum quia ex parte intellectus est aliqua virtus activa que habet effectum causatum a fantasmate. et ideo videtur quod quasi intellectus trahat ad se speciem.

Thus, the abstraction allowing the intellect to grasp an individual material essence is based on the dynamic interplay of the active features of mind with sensory representations. Crockaert emphasizes the internal cohesion of this event when he asserts that the effect of the mind's "virtus activa" is caused by the phantasm. This *prima facie* puzzling remark seems broadly consistent with Crockaert's overall view of a "virtus activa" enabling sensory representations to move the intellect, which in turn assimilates (notice the recurrent "trahit") the species containing the cognitive content that will be transformed into an actual intelligible<sup>188</sup>. Thus, the human mind receives the results of its own processes applied to the information present in sensory representations.

Crockaert rejects other accounts of the interplay between agent intellect and phantasms, such as the "removendo/separatio" thesis<sup>189</sup>, the view according to which they jointly move the possible intellect<sup>190</sup>, and the thesis that intellection is produced by the agent intellect only, with the phantasm merely playing the role of a "conditio sine qua non". He acknowledges that the notion of an agent intellect, affecting the phantasms with an "immutatio spiritualis", is not totally unproblematic. He points out, however, that phantasms

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<sup>187</sup> See *Summa de creaturis*, II, q. 58, a. 1, 501a: the intellect abstracts, e.g., the notion "man" from individual men, not soul from body. For Thomas, see ch. II, § 3.5.

<sup>188</sup> The concept of the agent intellect's "virtus activa" investing the phantasms, recurs in Francesco Sylvester of Ferrara, who resumes this idea from Aquinas' *Summa contra Gentiles*, II.77. Ferrara's interpretation is undoubtedly inspired by Giles of Rome's views. See, for discussion, ch. VII, § 2.2.

<sup>189</sup> For this position, see Godfrey (ch. III, § 3.2), Brito (ch. III, § 3.5), and others.

<sup>190</sup> A rather abstract and hypothetic position mostly suggested by those rejecting the view of an agent intellect processing sensory images. See, for instance, Olivi (ch. III, § 3.4) and Durandus (ch. IV, § 2.1).

cannot take part in the production of intellectual knowledge, unless substantively modified by the human mind.

The *De anima* commentary of Crockaert is imbued with the theses of Thomas' cognitive psychology<sup>191</sup>. Rarely mentioned by later authors, Crockaert, through his work as a teacher at the university of Paris, will deeply influence the future generations of Second Scholasticism. His students include Francisco de Vitoria and Domingo de Soto, who fostered the first generation of Spanish Schoolmen in the second half of the 16th century, including authors such as Toletus and Suarez<sup>192</sup>.

### § 3. PRECURSORS OF THE SCHOOL OF PADUA

The gnoseological works of Paul of Venice, Gaetano of Thiene and, to a lesser degree, Apollinare Offredi, are the immediate precursors of disputes on intelligible species in the School of Padua, starting at the end of the 15th century and continuing until the interest for psychological investigations declined at the *Studio Patavino*, after the death of Zabarella and Piccolomini<sup>193</sup>. Venice's and Thiene's analyses of intelligible species focus on the need for an effective co-operation between agent intellect and phantasm, in ways echoing Capreolus' suggestions but conflicting with the views of most 13th- and 14th-century authors.

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<sup>191</sup> See also *In tres de Anima*, III, q. II, a. 3-5, regarding the "quidditas rei materialis" as first object, knowledge of the singulars, and cognition of separate substances, respectively.

<sup>192</sup> See C. Giacon, *La seconda scolastica*, vol. I: *I grandi commentatori di San Tommaso*, Milano 1944, 25; A. Guy, "L'école de Salamanque", in *Aquinas* 7 (1964), 274-308, on p. 277; E. Caruso, *Pedro Hurtado de Mendoza e la rinascita del nominalismo nella Scolastica del Seicento*, Firenze 1979, 12.

<sup>193</sup> Blasius of Parma, teaching at Padua in 1384-88, is to be mentioned here, but he does not touch upon the problem of intelligible species in his *De anima* commentary; cf. Biagio Pelacani da Parma, *Quaestiones de anima*, ed. G. Federici Vescovini, Firenze 1974.

### 3.1. *Paul of Venice*

The psychological writings of Paul of Venice<sup>194</sup>, Augustinian Hermit and elder contemporary of Capreolus, seem influenced by Giles of Rome and by the overall approach of Gregory of Rimini, who attempted to absorb Ockham's teachings without rejecting the species theory.

In the *Summa philosophiae naturalis*<sup>195</sup>, Paul maintains that the mental act presupposes two intelligible species. One of them is produced by the sensory representation, "in virtute intellectus agentis"<sup>196</sup>. This species actualizes the possible intellect, and enables it to know the quidditative essence "aspectu recto"<sup>197</sup>. The second species, abstracted by the possible intellect (presumably from the 'first-order' species), plays a rather complicated functional role: it

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<sup>194</sup> Paulus Nicolettus Venetus, OESA, 1369/72 Udine—1429 Padua; Italian philosopher and theologian; studied in Oxford (1390-93); then possibly at Paris; between 1395 and 1408 returned to Padua as reader in philosophy, probably in the convent of the Order; between 1408 and 1420 professor of arts at the university, Padua; in 1412 also at Parma; banished from the Venetian states (1420-29), he taught also in Siena and Bologna; returned in 1429 to Padua; wrote his *Summa naturalium* between 1405-20 and completed his *De anima* commentary probably ca. 1428; he is succeeded by Gaetano of Thiene. His logic and expositions of Aristotle are influential until the sixteenth century. His name reappears in the psychological reflection of the late schoolmen; see Petrus Martinez, *In tres libros Aristotelis commentarii*, Segunti 1575, 386a; Suarez, *Liber de anima*, 619b, 625b, 627a; F. Licetus, *De intellectu agente*, Patavii 1627, 84a; Sebastian Izquierdo, *Pharus scientiarum*, Lugduni 1659, 2b. On Paul of Venice, see: B. Nardi, *Sigieri di Brabante nel pensiero del Rinascimento italiano*, Roma 1945, 115-131; idem, *Saggi sull'aristotelismo padovano dal secolo XIV al XVI*, Firenze 1958, 75-93; A. Zumkeller, "Die Augustinerschule des Mittelalters: Vertreter und philosophisch-theologische Lehre", 244-46; Federici Vescovini, *Studi*, 241f; A. Poppi, *Introduzione all'aristotelismo padovano*, Padova 1970, 23; A.R. Perreiah, "A biographical introduction to Paul of Venice", in *Augustiniana*, 17(1967), 450-61; idem, *Paul of Venice: a Bibliographical Guide*, Bowling Green (Ohio) 1986.

<sup>195</sup> *Summa philosophiae naturalis*, Venetiis 1503 (reprint Hildesheim-N.Y. 1974). On this work and its popularity, see: E. Grant, "Aristotelianism and the longevity of the medieval world view", in *History of Science*, 16(1978), 93-106, on pp. 99-100; F. Lucchetta, "Recenti studi sull'aristotelismo padovano", in *L'averroismo in Italia*, Roma 1979, 91-120, on p. 108; E.P. Mahoney, "Saint Thomas and School of Padua at the end of the fifteenth century", in *Proceedings of the American Catholic Philosophical Association*. "Thomas and Bonaventure. A Septicentenary Commemoration", 48(1974), 277-285, on p. 277.

<sup>196</sup> This view has evolved, in the meantime, into an invariant of the Aegidian school. For Giles' influence on Paul Venice, see also Mahoney, "Albert the Great and the Studio Patavino", in *Albertus Magnus and the Sciences*, ed. J.A. Weisheipl, Toronto 1980, 537-563, on p. 543.

<sup>197</sup> *Summa philosophiae naturalis*, 90vb.

provides the intellect with "additional" actuality, connects it "reflexe" with the "quidditates", and enables it to grasp the intelligible nature of sensible reality separately from any specific representation<sup>198</sup>. The first type of species is singular and depends "in esse et conservari" on the phantasms, whereas the second type depends on the possible intellect only<sup>199</sup>. The notion of a 'first-order' species subject to further intellectual activity is closely related to the view put forward by Gregory of Rimini, as well as by 14th-century masters of arts, such as Thomas Wilton and James of Piacenza<sup>200</sup>. To the best of my knowledge, however, it is the first time in the history of medieval Aristotelianism that the phantasm is unconditionally endowed with the power to trigger the intellect's first act<sup>201</sup>.

Paul pursues this approach in his *De anima* commentary, presenting a theory of the intellectual act without mediating species. The phantasm is the direct object of the agent intellect: the latter impresses upon the former the capacity to move the possible intellect<sup>202</sup>. The species is assimilated to the universal abstracted form,

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<sup>198</sup> *Summa philosophiae naturalis*, 90vb: "secundum genus est specierum intelligibilium abstractarum ab intellectu possibili: secundum quas intellectus fit magis in actu quam primo: et secundum quas intellectus reflexe intelligit quidditatem absque alia repraesentatione individuali". For a quite different application of the "recte-reflexe" distinction, cf. the view of John Baconthorpe, discussed in ch. IV, § 2.2. For the view of singular species as condition for abstracting the quidditative essence, see already Thomas Wilton, *An intellectus noster possit de duobus singularibus formare duo verba*, 119: "Et intelligo, quod sicut res extra singulariter gignit sui speciem in sensum exteriorem, sensus autem exterior in sensum communem, et sic ulterius in virtutem imaginativam, sic virtus imaginativa ulterius gignit speciem rei singularis. Quo modo autem intellectus devenit in cognitionem ulterius intelligendo per hunc modum. Intellectus in actu per speciem rei singularis, virtute luminis intellectus agentis illuminantis species existentes in intellectu possibili, in quo illud lumen recipitur subiective, non in virtute phantastica, nam sibi non proponitur aliquod lumen spirituale, ponit, rem repraesentatam sibi ut hic et nunc considerare, nota ut hic et nunc, et abstrahere sic quidditatem a conditionibus individuantes, sed tota ista abstractio praesupponit speciem rei singularis intellectu a qua fit abstractio."

<sup>199</sup> For this kind of species, see also *In de anima*, 137rb.

<sup>200</sup> See ch. IV, § 3.3, and § 4.1 and 6.

<sup>201</sup> *Summa philosophiae*, 91vb: "actus intelligendi primus est effectus fantasmatis et non intellectus possibilis."

<sup>202</sup> *In libros Aristotelis de anima explanatio*, Venetiis 1504, 129va: "Secundo sequitur quod fantasma est obiectum immediatum intellectus: sicut sensibile ipsius sensus: quia intellectus immediate respicit fantasmata: sicut sensus sensibile. Tertio sequitur quod intellectus agens imprimit aliquid fantasmatis quia aliter non moverentur fantasmata ab intellectu agente."

and elsewhere to the intention as actually grasped cognitive content<sup>203</sup>. This work—in accordance with Averroes' view of "intentio"—blurs the distinction between the species and the final results of intellection, thus reducing to a minimum the species' mediating role<sup>204</sup>.

An interesting summary of Paul's cognitive psychology can be found in his *De anima* commentary, which provides a meticulous, though rather artificial, overview of the multifarious activities of the agent intellect. In this respect, four main operations are to be distinguished. The first operation is the abstraction of the "quidditas" from the singular thing which is thereby transformed, without separating the quidditative essence from its individual subject, into a possible object for the intellect<sup>205</sup>. With its second operation, the agent intellect lifts the phantasm from its potential status, and turns it into an actually known content. Subsequently, the agent intellect abstracts an intelligible species from the phantasm, and delivers it to the possible intellect. Venice emphasizes that this third operation is carried out with the active co-operation of the phantasm. Finally, the agent intellect unifies this intelligible species with the "quidditas" and the phantasm. In virtue of the fourth operation—so Paul claims, though without providing an argument for this remarkable conclusion—the intellect comes to know the quidditative nature of sensible reality "per se et immediate"<sup>206</sup>! These distinctions, introduced in order to secure the conti-

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<sup>203</sup> *In De anima*, 130va: the species is defined as "intentio intellecta in actu" and on f. 131ra as: "(...) forma universalis realis abstracta quae est in intellectu possibili subiective per intellectum agentem. & haec dicitur species intelligibilis." The 'subjective' presence of the intelligible species in the intellect was underlined already by Hugolinus of Orvieto (ch. IV, § 3.5), Thomas of Wilton (ch. IV, § 4.1), and James of Piacenza (ch. IV, § 4.6).

<sup>204</sup> See also *In de anima*, 137rb, and 154vb-155rb.

<sup>205</sup> This operation of the agent intellect with respect to the quidditative essence is rather problematic, because the activity of the former is supposedly immanent, i.e. regards only contents or representations present in the human soul. However, it is likely that according to Paul the intellect merely expresses the "quidditas", rather than processing it.

<sup>206</sup> *In De anima*, 137rb: "Notandum secundo quod intellectus agens in prima notitia intellectus possibilis facit quadruplicem operationem. primo quidditatem abstrahit a re singulari: non quia separet loco et subiecto quidditatem a suo individuo: sed facit eam obiectum intellectus absque conditionibus materialibus. Secundo abstrahit fantasma a potentialitate et privatione: quia ubi prius solum erat potentia intelligibile nunc facit ipsum actu intellectum. Tertio abstrahit a fantasmate speciem intelligibilem

nuity between mental and sensory capabilities and representations, have disruptive side-effects: the simple apprehension of the essence of a material thing, with its intrinsic cohesion, is definitively lost<sup>207</sup>.

Paul of Venice integrates various views on intelligible species. Gregory of Rimini, who argued that intellectual abstraction is based upon prior intuitive knowledge, regarded the species primarily as mental content. And according to Paul, the species—characterized as form and “*intentio intellecta*”—can be the object of a ‘second-order’, abstractive operation of the intellect. This fully naturalistic foundation of intellectual cognition reveals the strong influence of 14th-century Averroist masters on Venice’s philosophical psychology<sup>208</sup>. His eclecticism, however, does not result in a coherent synthesis of heterogeneous doctrinal elements: the account of the role of the agent intellect, very briefly summarized above, is a characteristic of his entire work.

Strongly influenced by post-Jandun Averroists, and adopting a naive naturalistic interpretation of Giles of Rome, Paul divests the intelligible species of its mediating function, and accepts it as an unproblematic notion. Many representatives of the later School of Padua, by contrast, will reject this concept, on the basis of a new analysis and a more accurate reading of Averroes.

### 3.2. *Gaetano of Thiene*

Gaetano of Thiene<sup>209</sup> moves away from a more strictly Averroist tradition<sup>210</sup>. Nonetheless, he frequently refers to Averroes and to

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quam reponit in intellectu possibili: et quia ad hanc operationem active concurrunt phantasma: quod est agens particulare: immo haec species intelligibilis est singularis. Quarto unit istam speciem cum quiditate: et cum phantasmate: immo intellectus intelligit quiditatem per se: et immediate.”

<sup>207</sup> See also the species of the “*cogitativa*”, assigned a fourfold task in *In de anima*, f. 137ra, and the first four items in the list of six intellectual abstractions, on f. 155rb: (i) “*actuatio phantasmatis*”; (ii) “*depuratio*”, that is, “*productio speciei intelligibilis ex phantasmate tamquam ex causa effectiva*”; (iii) “*separatio*”, leading to a more general concept; (iv) “*specificatio*”, consisting in the production of ‘second order’ species; (v) “*compositio*” of concepts; (vi) “*deductio*”.

<sup>208</sup> See *In de anima*, 131ra, on the doctrine of a unique intellect for mankind.

<sup>209</sup> Caietanus de Thienis, 1387–1465; Italian philosopher and physician of Vicenza; 1412, student in the school of arts and medicine, Padua; apparently not a student of Paul of Venice at the university, perhaps he was at the convent; 1417, *magister artium*; 1418, *doctor artium*; 1430, taught logic, Padua; 1430–62, taught natural philosophy, Padua; appointed to the chair of philosophy after Paul’s death; his

medieval Averroistic authors of the school of Jandun. The persistently strong appeal of the Averroistic tradition emerges also from his views on intelligible species, significantly influenced by the work of Albert, Thomas, and Gregory of Rimini<sup>211</sup>.

Thiene's cognitive psychology is based on the thesis that the intellectual act is causally dependent on the agent intellect as well as on the proper objects of the intellect—that is, the intelligibles. The latter move the intellect “mediantibus intentionibus imaginatis”, but only if they are detached from matter by the agent intellect<sup>212</sup>. According to Gaetano, whose work focuses on the origin of species, sensory representations and agent intellect are necessary and jointly sufficient causes of the intelligible species. Following Jandun and most of his students, he identifies in the phantasm or “intentio imaginata” the principal causal factor in the production of species<sup>213</sup>. Indeed, although the view that intelligible species are produced by sensible phantasms can be criticized<sup>214</sup>, the fact that

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successor was Nicoletto Vernia (see ch. VI, § 2.1). His name recurs in the psychological reflection of later schoolmen; see Petrus Martinez, *In tres libros Aristotelis commentarii*, Segunti 1575, 337a; Collegium Conimbricense, *Commentarii in tres libros De anima Aristotelis Stagiritae*, Venetiis 1616, 298a; Antonius Ruvijs, *Commentarii in libros Aristotelis Stagiritae (...), de Anima (...)*, Lugduni 1613, 687; Collegium Complutense, *Disputationes in tres libros Aristotelis De anima*, Lugduni 1637, 480a; Sebastian Izquierdo, *Pharus scientiarum*, Lugduni 1659, 39b; cf. also Claudius Berigardus, *De vetera et peripatetica philosophia. In Aristotelis (...) tres de Anima*, Patavii 1661, 711. On Gaetano, see S. da Valsanzibio, *Vita e dottrina di Gaetano di Thiene, filosofo nello studio di Padova (1387-1465)*, Padova 1949; A. Poppi, *Introduzione all'aristotelismo padovano*, cit., 24; E.P. Mahoney, “Albert the Great and the Studio Patavino in the late fifteenth and early sixteenth century”, cit., on pp. 543-45;

<sup>210</sup> In his *De anima* commentary, Averroes is constantly referred to; some passages suggest even that Gaetano accepts the uniqueness of the intellect; cf., for instance, *Expositio super libros de anima*, Venetiis 1493, 56vb, where intellectual knowledge is based upon a “continuatio” with the agent intellect. However, in *Expositio super libros de anima*, 58ra, he states that the creation of the intellectual soul is unquestionable “ex se ipsa” and not only through Catholic faith. For discussion, see also, E.P. Mahoney, “Saint Thomas and the School of Padua at the end of the fifteenth century”, cit., 277.

<sup>211</sup> *Expositio super libros de anima*, 67rb, and 74ra-va.

<sup>212</sup> *Expositio super libros de anima*, 54vb.

<sup>213</sup> *Super de anima*, 56vb; cf. 64rb.

<sup>214</sup> *Super de anima*, 64ra: (i) a material image cannot produce an immaterial effect; (ii) the material image is inferior to the intellect; (iii) were knowledge to be founded on sensible images, the human mind would know nothing after death. The latter argument played a role in the analyses of Peter of Aquila (ch. IV, § 1.2) and Thomas of Strasbourg (ch. IV, § 3.3). It will be used by 16th-century theological authors as a

the human soul produces species by virtue of its own powers is unquestionable<sup>215</sup>. The agent intellect is no more than an “agens remotum”: the phantasm, once it has received the “virtus” of the agent intellect, is sufficiently ‘spiritual’ to bring about the intelligible species:

Ad primam concedo quod fantasma una cum virtute recepta ab intellectu agente immediate produciunt speciem intelligibilem. Et cum dicitur quod illa virtus est individualis et per consequens non potest esse immediatum principium rei universalis et abstracte. Dicit Joannes Jandonus quod licet illa virtus sit individualis: est tamen tante spiritualitatis: quod sufficit ad productionem rei abstracte et universalis.<sup>216</sup>

The production of the species is functional in generating intellectual knowledge. Thiene characterizes the species as “dispositio”<sup>217</sup>; elsewhere, as the first act upon which intellection, that is, the second act, is based<sup>218</sup>. The agent intellect also plays a marginal role in the production of the second act, founded on the intelligible species and thus largely dependent on sense perception, though only indirectly so<sup>219</sup>. This conclusion is reached after an extensive analysis of Jandun’s views, only partially shared by Gaetano<sup>220</sup>.

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way of establishing the need for species as mnemonic contents; for otherwise, the separate soul would not be able to recall earthly experiences after death; see vol. II.

<sup>215</sup> Gaetano supports this claim by appeal to Averroes and Jandun, *Super de anima*, 64ra-b.

<sup>216</sup> *Super de anima*, 65vb.

<sup>217</sup> *Super de anima*, 56vb. For a similar characterization of intelligible species in Jandun, see ch. IV, § 4.3.

<sup>218</sup> *Super de anima*, 60va: “Actus primus est species intelligibilis: sive habitus in intellectu existens: quorum nullum est formaliter cognitio. (...) Actus vero secundus est intellectio qua intellectus formaliter cognoscit.” For the doctrinal background of this distinction, see Duns Scotus, discussed in ch. IV, § 1.1.

<sup>219</sup> *Super de anima*, 65vb: “Sed quicquid de hoc sit mihi videtur fore satis probabile: quod intellectus agens sit agens remotum respectu intellectionis: sicut respectu speciei intelligibilis: et quod sicut species sensibilis est primum agens sensationis: sic species intelligibilis est primum agens intellectionis: et quod fantasma ad intellectionem immediatius concurrat quam intellectus agens”; cf. “ad rat.” See Valsanzibio, *Vita e dottrina di Gaetano di Thiene*, 164-171. Valsanzibio’s characterization of Gaetano, on pp. 189-193 and 199, as an orthodox, moderate schoolman, cannot be accepted, at least insofar as his species doctrine is concerned.

<sup>220</sup> Jandun, though entertaining serious doubts, regarded the agent intellect as “agens remotum” in the production of the intelligible species, but he viewed it as “agens principale” in the production of the intellectual act.



### 3.3. *Apollinare Offredi*

Apollinare Offredi<sup>221</sup> characterizes the intelligible species as “qualitas” and the intellection as “actio”, thus introducing a substantive distinction between intelligible species, cognitive act, and intellectual habit<sup>222</sup>. Like Jandun and Gaetano of Thiene, he emphasizes the functional role of species in the production of knowledge, and regards the intelligible species as a “dispositio ad intellectiōnem”<sup>223</sup>. Like many of his contemporaries, he accounts for the origin of intelligible species on the basis of the joint action of agent intellect and phantasm.

The abstraction of species does not coincide with the process of isolating and delivering to some intellectual region the intelligible core of the sensible “subiectum”. The reason for this is that the agent intellect operates only through sensible images, and out of them produces the intelligible species “de novo”<sup>224</sup>. Thus, the intelligible species are not intelligibles, embedded in sensible things and to be unveiled by the intellect. They are more properly viewed as intermediary representations generated by the agent intellect in the course of a more comprehensive mental processing of sensory information.

Apollinare touches upon two time-honored questions concerning the species, only rarely examined by his contemporaries. Interestingly, both of them will be extensively discussed from the end of the 15th century onward. The first question is whether the intellectual soul can be counted as “subiectum” of the received species.

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<sup>221</sup> Apollinaris Offredus Cremonensis, fl. med. XV sec.; Italian philosopher and physician, professor at Piacenza; he wrote an *Expositio in libros de anima* and *Quaestiones subtilissime super eosdem libros de anima*, both published in the same volume, Venice 1496; he was known to several later authors; he is quoted by Pomponazzi, “Quaestio de speciebus intelligibilibus et intellectu speculativo”, in *Corsi inediti dell'insegnamento padovano*, ed. A. Poppi, Padova 1970, 177-210, on p. 205, and by Ludovico Buccaferrea, *Lectiones super III libros de anima Aristotelis*, Venetiis 1566, 135ra.

<sup>222</sup> *Quaestiones de anima*, 86va-b. Notice that various Averroistic masters of arts in the 14th century considered intellection as “passio”; cf. ch. IV, § 4.4-6. Later schoolmen will regard the mental act either as “actio” or as “qualitas”; see ch. X and XII.

<sup>223</sup> *Quaestiones de anima*, 88rb; see ch. IV, § 4.3 and Gaetano, *Super de anima*, 56vb, discussed above in subsection 2.

<sup>224</sup> *Quaestiones de anima*, 99rb-va.

The second question, closely related to the first one: "Is there an intellectual memory?"<sup>225</sup>.

The first question had already been posed by Albert the Great, who gave a negative answer. In accordance with his overall criticism of a strict physicalist view of the human mind<sup>226</sup>, he proposed a less stringent relationship between "receptum" and "recipients", that is, between mental content and soul<sup>227</sup>. Apollinare mentions Albert's opinion, but eventually gives an affirmative answer to the first question<sup>228</sup>. The fact that the species are "subiective" present in the intellect does not mean that they are permanently there: indeed, species are not 'stored' in the intellect. Yet, so Offredi claims in answering the second question, a weaker memory trace of the intellectual act remains in the intellect. As Ockham maintained before him, this is to be identified with a sort of "habilitas"<sup>229</sup>.

Apollinare Offredi's view of intelligible species is historically significant. Firstly, he endorses the soul-as-subject thesis, and postulates the 'subjective' existence of the species in the intellect. Many leading figures of the School of Padua, such as Nifo and Achillini, by contrast, either downright reject or express reservations on the species theory—challenging, in particular, the 'subjective' presence of the species in the human mind<sup>230</sup>. Secondly, many naturalistic Renaissance philosophers accepted as a dogma (Avicenna's argument) that there is no intellectual memory, and used this dogma in undermining the very idea of intermediary or persisting intelligible species<sup>231</sup>. In turn, this view was rejected by many

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<sup>225</sup> See already the analyses of Peter of Aquila (in ch. IV, § 1.2), and, subsequently, Peter Crockaert, discussed in § 2.7.

<sup>226</sup> The 'subjective' presence of cognitive contents in the human soul was challenged by Ockham too; cf. ch. IV, § 3.1. In following chapters, I examine the various 16th-century disputes concerning the issue whether cognitive objects and species are "objective" or "subjective" in the human soul.

<sup>227</sup> Cf. *De intellectu et intelligibili*, II, c. 1, 504b; c. 4, 510a-b; *De anima*, III, tr. 3, c. 11, 223; tr. 2, c. 7, 186, and c. 9, 189; *De unitate intellectus*, pp. 9, 23, and 29. See ch. II, § 2.1 for discussion.

<sup>228</sup> *Expositio in de anima*, 43va. See also his conception of self-knowledge, on p. 38vb: the intellect knows itself by a species which is present "subiective" in it.

<sup>229</sup> *Quaestiones de anima*, 85ra-87va.

<sup>230</sup> For Apollinare's impact on Paduan discussions, see also Mahoney, "Albert the Great and the *Studio Patavino*", cit., 549, note 46, who suggests that Apollinare may have induced in Nicoletto Vernia a greater interest for Albert's psychology.

<sup>231</sup> See, for instance, Buccaferrea, discussed in ch. VII, § 3.2.1.

theological authors who, for obvious reasons concerning the life-after-death, maintained that intelligible species are necessary.

### 3.4. *Concluding remark*

Many of the 15th-century authors examined in this chapter share the view that sensitive faculties and phantasms effectually contribute to generating the intellective act. Giles of Rome and the 14th-century Averroists—most notably Jandun and his Italian followers—stress the essential dependence of human cognition on sensible reality. Their views are endorsed by many Thomists, such as Capreolus, as well as by eclectic authors, such as Paul of Venice, whose psychological theses place Giles' teachings into a strongly naturalistic setting.

During this period, the role of the agent intellect, primarily supposed to illuminate phantasms, is extended to more problematic and rather obscurely characterized functions. Many authors are unable to account for knowledge of sensible reality in terms of a coherent, hierarchically organized progression. Some postulate a series of unrelated imprintings and abstractive processes taking place after the initial illumination of the phantasm. These processes are induced by the agent intellect, and understood as preconditions for the intellectual grasp of cognitive contents. Thus, the cognitive act is no longer thought of as caused by an agent intellect and received by a knowing intellect. The agent intellect merely fulfils preconditions for the act. And, according to some authors, the possible intellect is involved only in virtue of a purely receptive disposition. Others, however, claim that it is more actively involved, carrying out an abstractive type of function. The prevailing picture is that of the human mind triggering the senses to produce what it will eventually receive. Accordingly, the role of abstraction tends to become rather problematic. Capreolus and Gaetano of Thiene, for example, dispense with intellectual abstraction, and Paul of Venice *de facto* regards abstraction as a mode of operation of the possible intellect.

There are exceptions to this overall tendency, to be sure. Versor and Crockaert return to Aquinas' teachings, occasionally with significant variations, while Heymeric and John of Malinas put for-

ward a coherent reformulation of the Albertistic heritage. The influence of these authors on the Renaissance debate seems rather marginal, however.

The initial reaction of early Renaissance authors to the medieval legacy in general, and to 15th-century works in particular, is influenced by newly discovered classical texts, by specific discussions at the various centres of learning, by novel and philologically more accurate readings of Aristotle and Averroes. This complicated pattern encompasses many Peripatetic philosophers casting doubt on the necessity of mediating species, and Platonic authors accepting, transforming and incorporating species in a different categorial framework. Moreover, the initial sceptic reactions to formal, mediating principles in intellectual knowledge will be counter-balanced, as we shall see in the second volume, by a host of active Peripatetic defenders.

#### § 4. THE HARVEST OF MEDIEVAL SPECULATION

The doctrine of intelligible species addresses the problem of how the human mind can attain knowledge of sensible reality. Scholastic conceptions constrain the range of possible solutions to this formidable problem: mind, though being immaterial, is form of the body, and therefore depends upon sensory information for the contents of knowledge. A notable subproblem is how the immaterial mind is able to relate to sensible representations.

Thomas Aquinas theorizes a *mediated* assimilation of the essences of sensible reality, in contrast with the direct grasp of cognitive contents in phantasms, as Aristotle had enigmatically suggested. Empirical knowledge is the final outcome of a process by which an unknowing agent intellect abstracts a representation, thereby triggering the mental grasp of the represented content. (Representations may themselves become objects of cognition only by further reflective acts.) Intelligible forms, in Aristotle's categorial framework, can only be thought of as (potentially or actually) *present* to the mind, which grasps them when performing

the intellective act<sup>232</sup>. Species, by contrast, are *produced*, in the sense that the human mind generates a representation of sensible objects.

According to the doctrine of intelligible species, the human mind is neither merely passive nor thoroughly active in the process of knowledge acquisition. Intellectual knowledge depends on perceptual faculties, but the possible intellect receives only what has been abstracted from sensory representations by the agent intellect. Thus, the mind is capable of generating a universal representation of the sensible world, which depends on the ultimate sources of change in the senses, that is, on the actual objects of perception.

Grounded in atomic operations presupposing no intelligence, the doctrine of intelligible species meets a central challenge for cognitive psychology, namely that of constructing a non-circular explanation of knowledge acquisition. It has the additional advantage of dispensing with innate contents, thus requiring neither privileged access to the mental realm nor a homuncular 'inner' vision of latently present forms. Indeed, the theories of intelligible species in their historical development may be regarded as a sustained effort to analyze knowledge acquisition in terms of elements, principles, and activities which are neither cognitive contents nor self-sufficient cognitive capacities. The species, rather than being the primary object of awareness, is a representation of such primary object which provides more than purely perceptual information. Critics who suggest that species are mere surrogates of primary objects of cognition failed to recognize that they were meant as *cognitive* representations of such objects.

Thomas' doctrine of intelligible species gave rise to a wide spectrum of reactions. Challenging criticisms were formulated during the fifty years following his death. Roughly speaking, these criticisms involve two main types of objections. Ontological objections purport to show that physiologically embedded representations cannot determine the immaterial mind. Logical objections attempt to demonstrate that the idea of a formal mediation in

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<sup>232</sup> Notice, however, the ambiguity in Aristotle's description of the operation of the agent intellect as both productive ("omnia facere") and unveiling (light); see ch. I, § 1.3.

intellectual knowledge is intrinsically inconsistent. Henry of Ghent and Ockham argue that the sole purpose of perception and knowledge, according to the species doctrine, is to construct an internal copy of the perceived or known thing. But this view involves an infinite regress: if seeing or knowing simply amounted to constructing a copy of the thing seen, one would have to make another copy to see the copy, and so on. This type of criticism—already used by Sextus Empiricus against the Stoics—does not take into consideration the unconscious, instrumental character of the intelligible species.

Thomas' doctrine was accepted by many medieval theologians and philosophers. Most positive reactions, however, gave rise to profound modifications of Aquinas' thought. In the first subsection below, the main lines of medieval discussions are briefly summarized. The doctrine of intelligible species, though providing valuable contributions to a non-circular theory of knowledge acquisition, is beset with obscurities and internal tensions. The second and third subsections focus on the presence of cognitive objects or forms in the human mind, and the related issue of the ontological status of intelligible species.

#### 4.1. *Retrospective survey*

The historical roots of the doctrine of intelligible species are rather complex. The use of the term seems to originate with the Latin Neoplatonics, but the Scholastic doctrine is not a straightforward elaboration of doctrinal elements typical of a specific philosophical school. One can hardly doubt, however, that Aristotle's integrated theory of perception and intellectual thought is the basic frame for medieval speculation on formal mediation in cognition.

Aristotle's account of how knowledge comes about is marked by a two fundamental tensions. In the first place, he regards the foundation of intellectual knowledge, namely the relation between phantasm and active mind, to be quite unproblematic, even though there is an overt ontological gap between the two elements involved. In the second place, since he describes the operation of the active mind both as a productive and as an unveiling act, it is unclear whether the possible intellect—defined as "container" (*topos*)

or “form” (*eidos*) of cognitive contents—receives the sensible, albeit matterless, forms or else the agent intellect’s elaboration of sensory information. As a consequence, the status of the known forms and their presence in the mind could not be precisely specified.

These problems stem from Aristotle’s overall physicalist approach<sup>233</sup> to psychological issues, into which he allows the possibility of non-physical changes, the existence of matterless forms, and an immaterial, agent intellect taking part in a physiologically grounded cognitive process. Before its impact on the Latin West, however, Peripatetic psychology was profoundly transformed by Hellenistic and Arabic commentators. Their Platonizing reflections on Aristotelian noetics provided a solution to these problems, based on a pronounced nativist turn in the Stagirite’s cognitive psychology.

A central point in Aristotle’s noetics is the parallel between, on the one hand, agent and possible intellect, and, on the other hand, form and matter. This conception, which implies a commitment to a nativism of contents, paves the way for the hierarchical noetics envisaged by the Neoplatonics and the cosmological psychology of Arabic philosophers. This idea of a formal hierarchy between agent and possible intellect, combined with various types of innatism, dominates the early medieval reception of Peripatetic psychology. It will recur in Neoplatonically inspired authors, such as Albert the Great and Dietrich of Freiberg. The Thomistic doctrine of intelligible species, by contrast, purports to account for the production of intellectual knowledge on the basis of sensory representation processing: cognitive contents are brought about in our soul by the capacity to generate mental representations of the objects of perception.

The doctrine of intelligible species, though providing a more detailed account of knowledge acquisition, does not contain a convincing solution for the ‘ontological’ status of the cognitive objects and principles involved in mental acts. This problem is intimately related to characteristic features of Aristotle’s conceptual frame for

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<sup>233</sup> Notice that with the term ‘physicalist’ I am merely pointing at Aristotle’s methodological approach which subsumes psychology under natural philosophy; I disagree with reductionist interpretations of Aristotle’s philosophy of mind.

psychological issues. Indeed, the presumed 'subjective' inherence of intelligible species in the possible intellect is one of the main targets of the opposition against species, and will become an integral part of the rather peculiar 'subjective-objective' discussion persisting throughout the Renaissance.

In the Arabic speculation on intention, which together with Augustine's views on "species" and cognition is the proximate source of the Scholastic species, two conceptions converge: the Aristotelian matterless form and the Hellenistic cognitive impression.

The Epicurean *prolepsis*, characterized as the effect of an involuntary and unconscious mental mechanism, is viewed as the basis for conceptualization. The Stoics focus on the criterial role of unerring cognitive impressions (*phantasiai kataleptikai*), assigning them the function of providing reliable data for discursive reasoning. When the soul is affected by a cognitive impression, it becomes capable of perceiving determinate objects and forming true judgments.

The Arabic intention echoes these Hellenistic conceptions. It is both a representational item and the result of the soul's operations on the effects of sensation. Deeply influenced by Neoplatonic metaphysics, Arab philosophers do not accept Epicurean or Stoic materialism, and develop a theory of conceptual abstraction which introduces a clear-cut hierarchy of sense perception and intellectual knowledge. Thus, in spite of their acceptance of the Aristotelian physicalist frame for cognitive psychology, Arab philosophers tend to stress the qualitative difference between sensible reality on the one hand, and mental events and phenomena on the other hand. Authors such as Avicenna and Averroes, however, do not distinguish precisely, at the mental or intellectual level, between representation and known content. In point of fact, it is not until Aquinas that this distinction is explicitly drawn and convincingly argued for.

Peripatetic psychology and its Arabic interpretation are assimilated by early 13th-century theologians without giving rise to conflicts with the latter's Augustinian convictions. This is hardly surprising if one takes into account the common background of Arabic and Augustinian psychologies—namely, Neoplatonic metaphysics



and Hellenistic theories of sense perception. Within this context of non-conflictual assimilation, Domenicus Gundissalinus restores the notion of impressed species, and an anonymous theologian, author of *De potentiis animae et eius obiectis*, is presumably the first to speak of an abstracted intelligible species. After the first systematic attacks launched by William of Auvergne and Bonaventure against aspects of the complex and multilayered heritage of Peripatetic psychology, two radically different doctrines of species will be developed by Thomas Aquinas and by Roger Bacon and other representatives of perspectivistic optics.

Both Bacon and Thomas seek a cognitive psychology that is immune to theological objections. In his psychological research, Bacon abides by the demarcation drawn by early 13th-century authors such as Grosseteste, presupposing fundamentally different methodological approaches to sense perception and intellectual cognition. Thomas, by contrast, possibly under the influence of Albert the Great, attempts to free the entire field of psychological investigation, in particular the mental realm, from theological preoccupations. Bacon draws a sharp but not always explicit distinction between the working of sense perception, based on sensorily impressed species, and intellectual cognition of the spiritual intellect, which necessarily depends upon divine illumination. Undoubtedly influenced by Moerbeke's translations of Aristotle, Aquinas gives an interpretation of Peripatetic cognitive psychology in which intelligible species play a key role. In his determination of an unconscious, mediating formal principle in intellectual cognition, the various strands of traditional and contemporary psychologies are still recognizable—that is, Aristotle's doctrine of a sense-dependent mental act grasping a matterless form, Augustine's view of species as a hierarchically organized cognitive principle, the Arabic speculation on intention and abstraction, and the early 13th-century, 'non-conflictual' reception of Peripatetic psychology. Developing the doctrine of intelligible species in terms of the overall frame of the participation of being, Thomas offers a foundation for the mind's natural relation with sensible reality. Though rejecting innate contents, he does not identify the mind's receptivity with a mere physical potentiality comparable to that of prime matter. Indeed, the human mind contains the first principles virtually, but

can formulate them explicitly only after its first contact with sensible reality. This *a priori* structure connects the human mind to God's wisdom, and provides a principled explanation for knowledge of sensible reality. This doctrinal context rules out the possibility of expressing the mediating function of intelligible species in terms of a physical impression of sensory representations upon the mind. In fact, the doctrine of participation enables one to combine and integrate the mind's special ontological status and its unproblematic relation with sensible reality, thus grounding the mediated cognitive grasp of sensible essences.

The doctrine of intelligible species is initially accepted in doctrinal contexts that emphasize either naturalistic or Neoplatonic connotations, and sometimes even both, as in Giles of Rome. This early reception of a formal mediation in intellectual cognition is a determining factor of the challenging criticisms formulated after Tempier's 1277 enactment. Henry of Ghent regards the intelligible species as impressed by sensory representations, thereby interpreting Aquinas' doctrine as founded upon a direct determination of cognitive contents by their sensible correlates, and mistakenly presuming a one-to-one correspondence between properties of intelligible species and phantasms. However, his alternative to intelligible species as a basis for intellectual knowledge—namely, an illuminated and therefore universal phantasm—suffers from a number of problems. In fact, a direct production of cognitive contents on the basis of sensory representational devices seems incompatible with Augustine's ontological distinction between intellect and sensible realm, especially when one takes into consideration that this very distinction was used against the doctrine of intelligible species. Equally unsatisfactory were the attempts to reconcile the doctrine of intelligible species with Augustinian psychological activism, undertaken by Franciscan authors, such as Matthew of Aquasparta or Roger Marston, who maintained that the generation of intelligible species is grounded solely in the mind's capacity to produce them upon occasional stirring of the senses.

Other critics active at the turn of the century, such as Godfrey of Fontaines, Radulphus Brito and John Baconthorpe, identified the species with the intellectual act itself, and argued for this identi-

fication using the Aristotelian thesis that the mind is 'nothing' before it effectively knows. Olivi presented a similar view when he stated that the species is the persisting effect of the cognitive act. This proposal provides a less complicated account of the production of mental acts. In this sense, then, notwithstanding the Neoplatonic connotations detectable in some authors, it may be regarded as a return to Aristotle's allegedly unproblematic conception of the mind as being intrinsically capable of grasping the intelligible kernel of sensory information. In effect, the identification of the species with the cognitive act suggests a definition of the species as an active and, implicitly, *conscious* representation of cognitive content. Notice, however, that these authors exclude *a priori* any direct contact between mind and (the information contained in) sensory representations. Therefore, a detailed account of how the human mind may produce mental acts regarding the sensible realm is not simply lacking, but seems utterly impossible.

The most extreme formulation of this view is given by Durandus of Saint-Pourçain. Unconcerned with the issue of possibly unconscious mechanisms underlying knowledge acquisition, and more radically rejecting any mediating principles, Durandus states that the mind has a direct and conscious cognitive grasp of whatever may 'encounter', determine or influence it. The thesis of the direct cognitive grasp of sensible objects will be more convincingly argued for by Ockham. But Ockham, whose perspective on the linguistic and semantic aspects of knowledge acquisition is doubtless an original innovation, does not give a detailed account of the mechanisms by which one gets to know sensible reality. He presupposes a direct grasp rather than explaining it in terms of more elementary mechanisms or principles. Indeed, he grounds the acquisition of knowledge in the molar capacity to establish contact with sensible reality, to extract its invariant aspects, and to express them into a mental language.

A remarkable consequence of the recurring attacks on impressed mental representations is that the authors defending intelligible species tend to accept the terminology of their adversaries. John Duns Scotus, for instance—partially modifying Aquinas' thought to fit his purpose—defends the intelligible species as impressed,

against Henry of Ghent, Godfrey of Fontaines, and Peter Olivi. Some years after Scotus' death, Giles of Rome, in his commentary on the Second Book of Lombard's *Sentences*, states that intelligible species are impressed by phantasms illuminated by the agent intellect. Other Augustinian Hermits and many 14th-century Averroists will emphasize the pivotal role of sensory capacities and representations in the generation of mental representations and intellectual knowledge.

During the first fifty years following Aquinas' death, intelligible species are the subject of intense philosophical dispute. From the 1320's onward, however, the issue gradually disappears from the philosophical agenda, and few doctrinal innovations are introduced until the second half of the 15th century. Thomas, Giles, Duns Scotus, and Jandun by and large dominate the accounts of authors defending this mediating principle. There are only few exceptions, including most notably Gregory of Rimini, who assimilates typical theses of the opponents in a positive doctrine of intelligible species. After Ockham, other authors reject or simply dispense with intelligible species, but detailed refutations comparable to those of Henry and Ockham are very rare before the works of the early representatives of the School of Padua.

The 15th-century debate on intelligible species leans essentially on 13th- and 14th-century doctrines. The revival of the philosophical tradition including the leading Scholastic authors is testified by the work of Peter of Ailly and Gabriel Biel, but also by Northern Dominican authors and Italian philosophers. Three global orientations are significant from a historical point of view. Firstly, many authors advance profoundly eclectic views, whether convincingly argued for or manifestly inconsistent, as is illustrated by the works of Capreolus and Paul of Venice, respectively. Secondly, a return to Albert's psychology, sometimes interpreted in decidedly Neoplatonic terms, dominates the psychological accounts of some North-European Dominicans. Thirdly, a 'new' Thomism arises during the second half of this century, as is exemplified by the works of John Versor and Peter Crockaert. These characteristic features mark the 15th-century speculation as the cradle of later Renaissance disputes.

#### 4.2. *Cognitive objects in the human mind*

Aristotle's integrated theory of sense perception and intellectual thought provided a solution for the origin and objective reference of cognitive contents. Various significant problems remained unaccounted for, however. In particular, (i) how does the mind grasp its object in sensory representations, and (ii) how are cognitive objects or forms present to or represented in the mind? The doctrine of intelligible species, obviously inspired by the Arabic conception of intention, was designed to give a solution to the first problem. After two centuries of heated discussion, however, there was nothing resembling a general consensus on the operation of the active mind regarding sensory representations. The open-ended character of the medieval discussion on intelligible species, with its unresolved controversies, is undoubtedly the most evident legacy bestowed to Renaissance philosophers by Scholasticism. However, also the second problem, on which I focus in the present subsection, seems far from being definitively settled at this stage of the dispute.

Defenders and adversaries of intelligible species mostly agree on a view of knowledge as the qualified presence of a cognitive object in the mind. They disagree about the ways in which the cognitive act is performed, its nature and, more decidedly, about the possible intermediary stages leading up to the intellect's first operation, by which a cognitive content is grasped and made present to the mind. Some alternatives to the doctrine of species stress the sufficiency of an 'objective' presence of the cognitive object in the knowing soul, and eliminate *de facto* any intermediary and 'subjectively' inherent species as a necessary condition for the effective grasp of essences. The discussion on the 'subjective' and 'objective' presence of intelligible species and cognitive object, respectively—addressed by otherwise heterogeneous authors such as Albert, Hervaeus Natalis, Ockham, and Vargas Toletanus—will recur in the Renaissance, where it gives rise to remarkable doctrinal developments, as is poignantly shown by the controversy between Caietanum and Sylvester of Ferrara on the agent intellect's illumination of phantasms. This distinction brings out the basic physicalist commit-

ments in Peripatetic psychology. The application of a conceptual frame derived from Aristotelian physics enables one to formulate a non-circular theory of knowledge acquisition, but entails a naturalistic approach to explaining psychological events and phenomena, a consequence not unconditionally accepted by the Scholastics. Thomas' doctrine of species tacitly presumes the subject-accident scheme to be applicable to intelligible species. However, Thomas is mostly silent on the issue of their ontological status, and the fact that he does not qualify them as being 'subjectively' in the possible intellect is probably not an unintentional omission.

An attempt to circumvent the unwanted consequences of Peripatetic naturalism in cognitive psychology is the doctrine of the 'objective' presence of cognitive forms in the intellect, which is applied to intelligible species by Albert and some 15th-century authors, such as John Versor. This doctrine, in effect, simply rejects the 'subjective' presence of species or contents without advancing a positive alternative, for the idea of an 'objective' presence remains rather vague, and cannot be regarded as a satisfactory solution for the original problem.

Another approach is characterized by various forms of Aristotelian innatism. Although the Aristotelian soul is altogether indeterminate with regard to what it will learn, it is set to acquire some kind of knowledge before it receives any external stimuli. This wired-in disposition to learn is expressed in the thesis that the intellectual soul is potentially what the sensible object is actually. In effect, Aristotle seems convinced that certain abilities, such as those pertaining to perception and thinking, are inherited rather than acquired by learning. This idea reappears in Aquinas' doctrine of the first principles contained in the agent intellect's light. Now, although Aristotle, unlike Plato, does not accept innate forms, he holds that cognitive forms, as matterless entities, exist only in the human intellect. Paradoxically, this idea fuels the subsequent Neoplatonic variations on innatism.

It is quite likely that Plotinus' noetics, defining the Intellect as the totality of cognitive objects, was also inspired by a thesis implicit in Aristotle's cognitive psychology, namely that the intelli-

gibles are not outside the intellect<sup>234</sup>. This doctrine is resumed by the later Neoplatonics, and will reappear in Avicenna's *Liber de anima*. In the course of the 13th century, this line of interpretation merges with the Augustinian doctrines of illumination and activism of the soul, which identify the only source of cognitive objects in the soul, without presuming cognitive contents to be present there. Notice that Aristotle and Augustine did not postulate innate mental contents, whereas the Neoplatonically inspired integration of their psychologies crucially hinges upon this idea. This is manifest in some early 13th-century authors, and also in Albert the Great.

It is not until the second half of the 13th century that serious conflicts arise with regard to the assimilation of Peripatetic psychology to an Augustinian milieu. Some of the authors who reject the doctrine of intelligible species discard not only sensory representations as a possible source of knowledge, but repudiate innate contents as well, independently of whether species or forms are concerned. Various types of innatism persist in this period, however. A mitigated innatism—that is, one that is not committed to innate contents—is found in Godfrey of Fontaines and Giles of Rome, who claim that intelligible species are virtually present in the agent intellect. This insufficiently specified thesis was probably devised to emphasize the immanence of the intellectual act, its origin in the intellect's own activity and, accordingly, its independence from the perceptual faculties. This approach results in a sort of dispositional innatism: the claim that the human mind virtually contains species or cognitive acts is tantamount to saying that the mind is capable of producing them. A step towards a sharper form of dispositional innatism is made by James of Viterbo, who defines the intelligible species as an innate "aptitudo", functional in producing cognitive acts concerning determinate objects. Henry Bate and Dietrich of Freiberg return to an overtly Platonic innatism of contents.

The problem of how cognitive objects exist in the (human) intellect is inherited by Renaissance authors; many of them will address it using the same terms and conceptual framework as their medieval

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<sup>234</sup> A.H. Armstrong, "The background of the doctrine that the intelligibles are not outside the intellect", in *Les sources de Plotin*, Genève 1960, 391-413.

predecessors, namely, exploiting the 'subjective-objective' distinction, and taking a definite stand on innatism.

#### 4.3. *The ontology of the intelligible species*

The uncertain ontology of intelligible species is a fountain of objections for many opponents of the notion. Indeed, the relation between intelligible species and phantasms, as well as that between species and intellect, are hard to characterize in a satisfactory way. The generation of intelligible species by phantasms seems to imply that they are accidents. Many authors, however, are reluctant to regard intelligible species as ontologically 'dense' as compared to the objects, and focus exclusively on their establishing an intentional relation between the cognitive faculty and the object. In Thomas, indeed, only few passages suggest the subject-accident thesis. He is mostly silent on this issue, and concentrates on the allegedly indispensable function of his principle. Buridan and most 14th- and 15th-century authors specify the accidental status of species as quality. But this does not settle the issue. Crucially, the relation between the species and the "quidditates" they are supposed to represent remains problematic. As I pointed out in the Introduction, these difficulties stem mainly from Aristotle's physicalist framework for cognitive psychology. In these concluding remarks, I will try to examine this issue from yet another perspective, by reflecting on the specific dualism between mind and body postulated by Aristotle and his medieval followers.

Aristotle's account of intellectual thought is one of the most perplexing aspects of his philosophy of mind. He states that thought is determined by the extent of our perceptual experiences. At the same time, however, he holds that mind has no bodily organ, and thus seems to suggest that its activity is bound to be sense-independent. These apparently conflicting claims hang together if one distinguishes clearly between our noetic faculty as such and the concrete acts of thinking. Aristotle undoubtedly subscribes to some form of dualism between mind and body, in the sense that he does not view the former as a material entity. And yet no radical separation between sensible and intellectual realms is intended in this



claim. Moreover, as Kahn pointed out<sup>235</sup>, it would be more correct to consider Aristotle as a 'quaternist': he treats the issues of thought and perception within the fourfold scheme of natural bodies, living things, sentient animals, and rational animals, rather than within the dual categories of matter and mind.

Scholastic theorists consider the human mind as independent from the body, with respect both to its operations and to its substance. According to Thomas and many others, the intelligible species—arising from the sensible representation, but simultaneously produced by the agent intellect—establishes a link between sensory operations and intellectual activity, and thus ensures the objective reference of cognitive contents. As in Aristotle's philosophy of mind, the doctrine of intelligible species presupposes a causal interaction between bodily events and mental events. Neither epiphenomenalism nor supervenience *ante litteram* are envisaged here, because the agent intellect is necessary for mental life—independently of whether it is viewed as directly producing intelligible species or as merely making their production possible by illuminating phantasms. Although Peripatetics do not always seem to accept a totally autonomous mind, they never claim that phantasms merely 'secrete' mental events. Mind and body are essentially separate entities, yet they have some mutual interaction. Therefore, the intelligible species cannot simply emerge from the processes occurring in the internal senses.

Scholastic doctrines of intelligible species, with exception of the theory that postulates innate contents, all subscribe to a form of interactive dualism between mind and body. Mind is the form of the body, yet performs a task—intellectual cognition—that transcends the body. Nonetheless, the process of knowledge acquisition depends essentially on the information flowing from the body. The doctrine of intelligible species arises in this doctrinal context, and purports to secure the connection between mind and sensible reality. The ontological status of species is bound to be only vaguely characterized: whenever a crisp determination is made, intelligible species lose their intermediate position, and become either a phe-

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<sup>235</sup> Ch. H. Kahn, "Aristotle on thinking", in *Essays on Aristotle's De Anima*, cit., 359-379.

nomenon emerging from phantasms, or a purely intra-mentally produced representation. In point of fact, both alternatives have often been pressed in medieval psychology.

The problem of the ontological status of intelligible species can be formulated as follows: Is it conceivable that an essence can be represented and known by virtue of 'something' which is not itself an essence? The intelligible species plays a pivotal role in Thomas' balanced view of the receptive and active aspects of the human mind: the species produced by the agent intellect arises from the phantasm and actualizes the possible intellect. Thomas focuses on the functional role of the species, and devotes only brief remarks to its ontological status, claiming that the species is a singular entity representing a universally predicable essence. This scanty determination, clearly manifesting Thomas' main concern with the species' *function*, sets the terms of later discussions, concisely expressing the uncertainties affecting subsequent ontological characterizations of species. Generally speaking, authors defending the intelligible species tend to underscore its dependence upon sensory representational devices. For example, Giles, the later Augustinian Hermits, Duns Scotus, and most master of arts converge on this point, though providing otherwise quite disparate accounts of knowledge acquisition.

Giles' view of intelligible species produced by phantasms is formulated within a noetic framework apparently influenced by a strange mixture of Neoplatonic and naturalistic doctrinal elements. The intelligible species is a similitude of the illuminated phantasm, impressed upon a possible intellect illuminated by the agent intellect so as to receive the species in an appropriate form. The species' functional role of representing the substantial essence of a sensible thing as universal is ontologically grounded in an unbroken chain of representing entities connecting the species to the substantial essence. Ultimately, it is only in virtue of the agent intellect's light that this content of sensory representations can be grasped. Within Giles' conceptual framework, dominated as it is by a formal hierarchy between possible and agent intellect, it is even more problematic to determine the precise ontological status of the intelligible species. Indeed, Giles' sharper dualism between mind and body

does not exclude sense-dependent mental representations, although their ontological status remains essentially vague.

Duns Scotus, defending the intelligible species against Henry, Godfrey and Olivi, argues for its necessary role in providing mind with an accessible representation of the cognitive object. His theoretical analysis focuses on the function of the species. The specific remarks devoted to its possibly problematic ontological status mainly regard its capacity for representing the universal (“*communis natura*”).

An interesting approach to the ontological status of intelligible species, from the overall perspective of the philosophy of mind, is the Averroistic speculation on formal mediation in intellectual knowledge. Averroes categorically excluded innate cognitive contents, but widened the gap between mind and body by claiming that the former is unique for the entire mankind. Nonetheless, the unique mind’s contents depend on imagined intentions. And after Thomas, Averroists will integrate this view in a theory of intelligible species produced by the representations or contents of the inner senses. The tension between a decidedly dualistic noetics and a naturalistic theory of knowledge acquisition culminates in Jandun’s professing his inability to explain the agent intellect’s role in the production of intelligible species. His Italian followers will try to tackle, but without reaching an adequate solution. Moreover, they specify in a more detailed fashion the status of the intelligible species as “*qualitas*”. Clearly, they are aware of the problems involved in determining the status of principles that are psychologically functional for the production of the mental act. It remains unclear, however, what a mental ‘quality’ amounts to, and how it can possibly represent sensible essences.

The Peripatetic conceptual framework does not provide the appropriate tools for determining the precise status of the entities and mechanisms involved in the formal mediation of intellectual knowledge. One may rightly object that Aristotle did not address explicitly the latter problem, but it would be superficial to use this observation to eliminate the systematic problem addressed by the doctrine of the intelligible species from the agenda of the philosophy of mind.

Whatever variation on (interactive) dualism between mind and body is upheld by medieval Peripatetics, a definitive solution to the question of the ontological status of intelligible species seems out of reach. Renaissance defenders of the species will continue to underscore its allegedly necessary role and function, while many opponents—just like their medieval predecessors—will emphasize the impossibility of satisfactorily determining what the species exactly *is*. This tension stems from the Aristotelian physicalist framework for cognitive psychology which, *vis-à-vis* its evident advantages, places severe restrictions on the characterization of the (carriers of) cognitive content. Moreover, the fact that the immaterial mind produces and receives a sense-dependent representation seems to entail a leap over an unbridgeable gap. This is particularly evident in the Averroistic school, traditionally considered as dominated by naturalistic tendencies. Indeed, it is very hard to explain how a separate intellect is able to manipulate sensible and transitory representational devices in order to derive from them a representation of the universal.

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The problematic legacy of the doctrine of intelligible species handed down to Renaissance authors—whether they are Peripatetics, Platonics, or relatively independent figures—principally consists of two interconnected issues, namely how cognitive objects or representations are present in the (human) mind, and how the intelligible species can be (onto-) logically characterized as a representational and intermediary entity or principle. Most Renaissance authors will address these problems in a context that is free from the tantalizing theological preoccupations of many Scholastic theologians. Nevertheless, though their accounts may occasionally appear more convincing and more carefully argued, they will eventually stumble on the same limitations, set by the conceptual framework of Aristotelian cognitive psychology.

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